Four Stereo Effect Processors

RV-4

User's Manual

Preface

Welcome to your new KAWAI 4 Stereo Effect Processors RV-4!

Before you start using your new SYSTEM, please do read through this manual. It will help you to understand and get maximum enjoyment out of each and every function provided by the RV-4 and to keep the machine in peak running condition.

Features

- Built-in effect processor
  The RV-4 comprises of 4 stereo IN/OUT effect processors. This configuration enables you to create a detailed and wide sound quality by 8IN/8OUT.
- Creating and storing sets of original effects
  You can select the method in which to connect the 4 effect processors, including serial and parallel connection. You can combine these connecting methods and create up to 50 sets of original effects. These sets you can store as user PROGRAMs in the user area of the SYSTEM memory.
- Individual external output for each effect processor
  Each of the 4 effect processors has its own external output even when the processors are connected serially. Therefore, you can select an output in accordance with the phase of the serial connection of an effect, even with the same sound.
- Built-in 100 PROGRAMs and 400 EFFECT SETTINGs
  The RV-4 contains in its memory 100 PROGRAMs and 400 EFFECT SETTINGs. These PROGRAMs and SETTINGs were pre- programmed based on 19 kinds of effects that were selected meticulously.
- Headphones jack
  The RV-4 features a headphones jack. You can directly monitor the output of 8OUT without using a mixer.
- MIDI
  When you use MIDI, you can change the PROGRAM from an external device. You can also change the type of effect only without changing the four effect processor connections.
- MIDI clock
  You can automatically set the delay time by MIDI clock (tempo information). This will enable you to obtain delay effects according to the tempo of each musical piece of the connected sequencer.
- 18-bit DA converter
  The RV-4's 18-bit DA converter enables a high grade effect performance.

KAWAI

Precautions

Installation site

Do not operate the unit in the places listed below for long periods. Such use may lead to machine trouble.

- Place exposed to direct sunlight.
- Environment with very high temperature and/or humidity. Also, environment with very low temperature.
- Environment exposed to sand and/or dust.
- Place subject to frequent vibrations.

Power supply

- Connect the RV-4 only to a power supply whose voltage is within the range given in the ratings plate on the back.
- Make sure that all power switches are off before changing equipment connections.
- Do not connect the unit to the same circuit used by a heavy load or equipment that generates line noise.

Influences from other electrical equipment

The RV-4 is a high-precision device that uses a super high- speed microprocessor. The unit may fail to operate properly when line noise and/or extreme voltage fluctuations occur. If there is such a situation, turn off the power once and turn it on again after several seconds.

Cleaning

- Clean the unit with a soft cloth.
- If you cannot remove stains from the unit, use a soft cloth lightly moistened with a mild detergent solution. Wipe with a dry soft cloth afterwards.
- Never use benzine and thinner.

Battery backup

The RV-4 contains a lithium battery that protects the memory contents while the machine's power is turned off. This battery lasts for 5 years or more. The life, however, may vary slightly depending on operating conditions. We recommend that you have your nearest authorized service representative replace the battery promptly after five years.

Repairs

Be sure to save all RV-4 data to an external device (ex: MIDI Data Filer) before taking in the unit for repairs or servicing. Otherwise, the data may be lost in the course of repairs.

Table of Contents

Preface i-1
Features i-1
Precautions i-2
Table of Contents i-3
Major Parts and Functions i-5

Section I. Introduction of RV-4 Basic System 1-1

1. EFFECT SECTION 1-1
2. Effect Setting of EFFECT SECTION 1-2
3. EFFECT SECTION Combinations 1-3
4. Program 1-4
5. PHONES Jack and MIX OUT Jack 1-6
6. DIGITAL IN/OUT Jacks 1-7

Section II. Basic Operations 2-1

1. Connections 2-1
2. Turning ON the Power 2-4
3. Selecting the Program Number 2-4
4. Using the BYPASS Switch 2-4
5. Adjusting the Input and Output Levels 2-5
6. Setting MIX OUT ON/OFF 2-5
7. Setting the Internal Memory Protect ON/OFF 2-6
8. Setting the Digital Input ON/OFF 2-6

Section III. Effects Program 3-1

1. Preset Program and User Program 3-1
2. Setting Each EFFECT SECTION to Effects or Bypass Mode 3-1
3. Changing the Connections of EFFECT SECTIONs 3-1
4. Adjusting the Balance of Direct Sound and Effect Sound of Each EFFECT SECTION 3-2
5. Adjusting the Output Level of Each EFFECT SECTION 3-2
6. Changing the Effect Type 3-3
7. Adjusting the Effect Parameters 3-3
8. Effect Type Functions 3-4
    1) Reverb 3-4
        ● HALL REVERB 3-4
        ● ROOM REVERB 3-4
        ● VOCAL REVERB 3-5
        ● PLATE REVERB 3-5
        ● LIVE REVERB 3-6
        ● SE REVERB 3-6
        ● GATE REVERB 3-7
    2) Delay 3-8
        ● TWIN DELAY 3-8
        ● MONO DELAY 3-10
        ● TRI PARA DELAY 3-11
        ● TRI SERIES DELAY 3-13

3) Other effect types 3-15
● ENSEMBLE 3-15
● CHORUS 3-15
● VIBRATO 3-15
● FLANGER 3-16
● PHASER 3-16
● BI PHASE 3-16
● TREMOLO 3-17
● EQ 3-17

9. Copying the Effect Setting 3-18

10. Saving the Program 3-19

Section IV. RV-4 Operations Using MIDI 4-1

1. MIDI 4-1
1) What is MIDI? 4-1
2) MIDI Information Used with the RV-4 4-1

2. Settings for MIDI 4-1
1) Selecting the Program Number Using MIDI 4-1
① Setting the MIDI channel 4-1
② Program mapping 4-2
2) Selecting the Effect Setting Using MIDI 4-3
① Setting the reception channel of EFFECT SECTIONs 4-3
② Program mapping 4-4
3) MIDI Control 4-4
① Controlling the parameters using MIDI 4-4
② Setting the delay time automatically using the MIDI clock 4-5
4) Sending/Receiving Data Using MIDI 4-6
① Connections 4-6
② Sending data (Bulk dump) 4-7
③ Receiving data (Bulk load) 4-7

Section V. Technical Data 5-1

1. Default Settings at the Time of Shipment 5-1
1) Setting conditions 5-1
2) Recovering the default settings 5-1

2. Troubleshooting 5-2

3. Summary of the 19 Kinds of Effects and Their Initial Setting Values 5-4

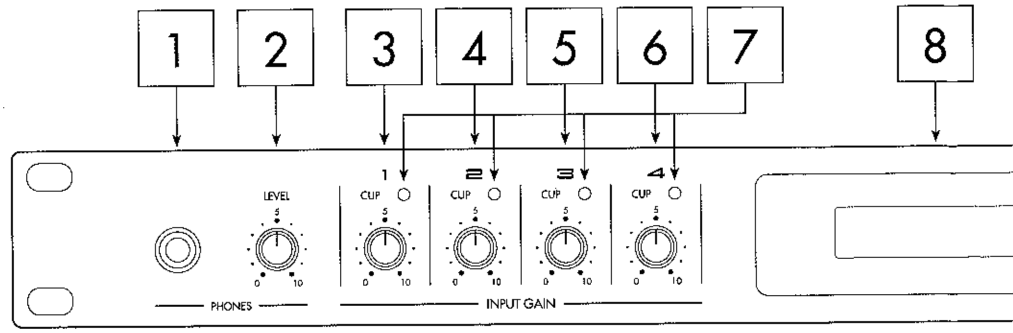
4. Blank Chart 5-8

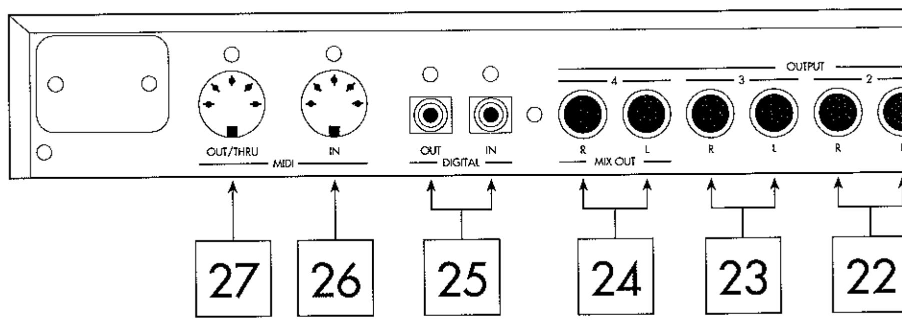
5. MIDI Implementation Chart 5-11

6. Main Specifications 5-12

Index I-1

Major Parts and Functions





[1] **PHONES jack**
Headphones jack. Monitors the mix output of effects [1] to [4].

[2] **PHONES LEVEL control (Headphones level control)**
Adjusts the headphones sound volume.

[3] **INPUT GAIN 1 control**
Adjusts the level of the signal connected to INPUT jack [17] of EFFECT SECTION 1.

[4] **INPUT GAIN 2 control**
Adjusts the level of the signal connected to INPUT jack [18] of EFFECT SECTION 2.

[5] **INPUT GAIN 3 control**
Adjusts the level of the signal connected to INPUT jack [19] of EFFECT SECTION 3.

[6] **INPUT GAIN 4 control**
Adjusts the level of the signal connected to INPUT jack [20] of EFFECT SECTION 4.

[7] **CLIP indicators**
Light 2dB before when the input level clips. Set input levels [3] to [6] as high in the range where these indicators do not light frequently as possible.

[8] **Liquid Crystal Display (LCD)**
Displays various messages, such as PROGRAM name.

[9] **PROGRAM NUMBER display**
Displays the PROGRAM number.

[10] **PRG. switch**
Switches the machine to the main mode for entering PROGRAM number. Executes the main mode from the EDIT and SYSTEM modes.

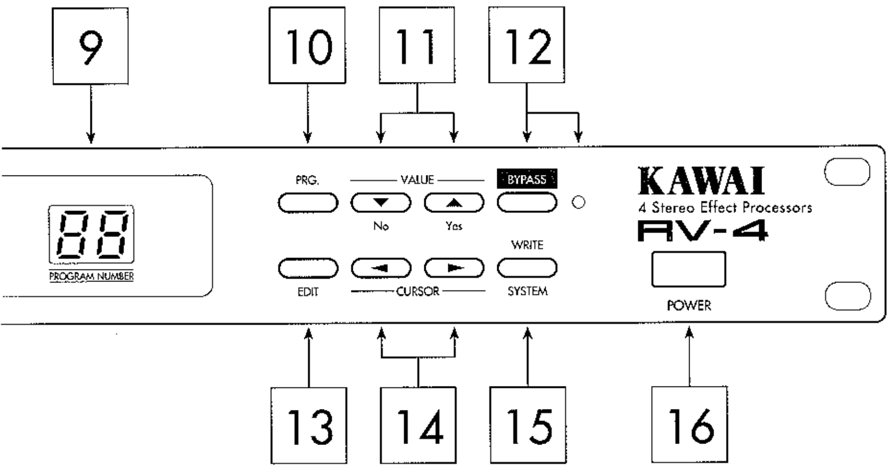
[11] **VALUE/Yes, No switches (up/down arrow switches)**
Used for adjusting values, such as that of effect parameters. Also used for entering Yes or No to the message displayed.

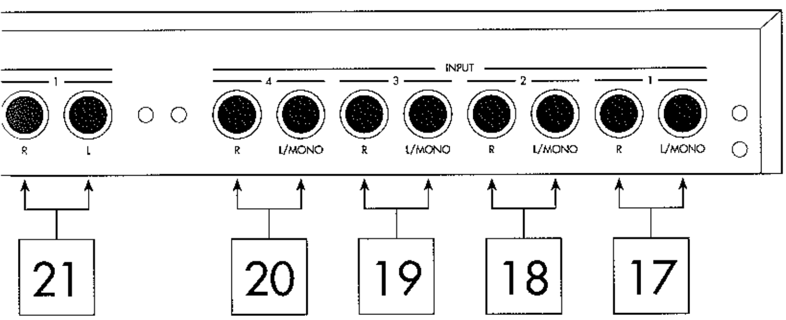
[12] **BYPASS switch**
Switches the machine to the BYPASS mode which causes all 4 EFFECT SECTIONs to be bypassed and the input signals to be output in their original forms. Press this switch again to cancel the BYPASS mode.

[13] **EDIT switch**
Switches the machine to the EDIT mode which is used to adjust the effect parameters.

[14] **CURSOR switches (left and right arrow switches)**
These switches move the cursor displayed on the LCD.

[15] **WRITE/SYSTEM switch**
Used to save user-defined EFFECT SETTINGs (pg 3-18). Also switches the machine to the SYSTEM mode when you want to change SYSTEM settings (pg 2-5) or MIDI settings (pg 4-1).





16 **POWER switch**

17 **INPUT 1 jacks**
Connect the input signal to EFFECT SECTION 1 here. Connect the monaural signal to L/MONO only.

18 **INPUT 2 jacks**
Connect the input signal to EFFECT SECTION 2 here. Connect the monaural signal to L/MONO only.

19 **INPUT 3 jacks**
Connect the input signal to EFFECT SECTION 3 here. Connect the monaural signal to L/MONO only.

20 **INPUT 4 jacks**
Connect the input signal to EFFECT SECTION 4 here. Connect the monaural signal to L/MONO only.

21 **OUTPUT 1 jacks**
Output jack of EFFECT SECTION 1.

22 **OUTPUT 2 jacks**
Output jack of EFFECT SECTION 2.

23 **OUTPUT 3 jacks**
Output jack of EFFECT SECTION 3.

24 **OUTPUT 4 jacks**
Output jack of EFFECT SECTION 4. When MIX OUT is set to ON (pg 2-5), this jack reproduces a mixed output of the output signals of EFFECT SECTIONs 1 to 4.

25 **DIGITAL IN, OUT jacks**
Digital input and output jacks compatible with general consumer equipment (AES/EBU, mode II).

26 **MIDI IN connector**
Receives MIDI signals.

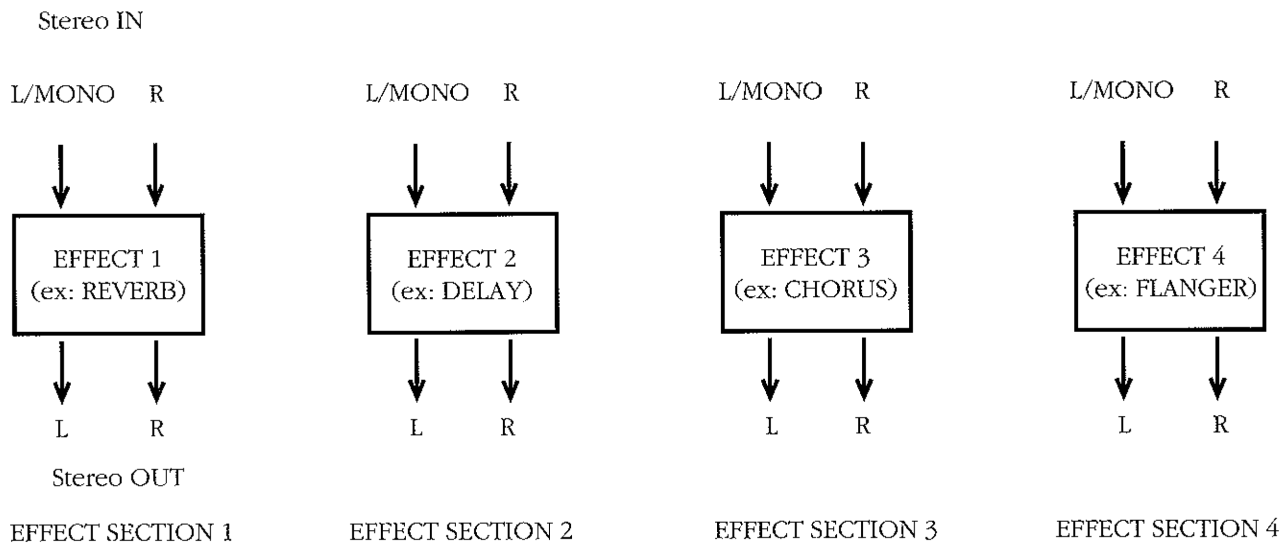
27 **MIDI OUT/THRU connector**
Sends MIDI signals from the RV-4 and also signals input from the MIDI IN connector.

Section I. Introduction of RV-4 Basic System

This section outlines the basic principles of the RV-4 SYSTEM.

1. EFFECT SECTION

The RV-4 configuration includes 4 stereo IN and stereo OUT effect processors. These four effect processors are known as EFFECT SECTIONs 1 to 4.



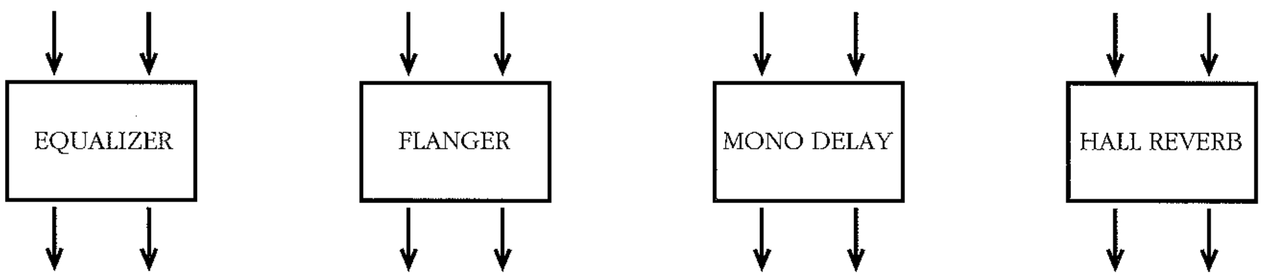
2. Effect Setting of EFFECT SECTION

Information on the effect setting in each EFFECT SECTION is given here. The following 19 kinds of effects are provided in the RV-4.

1. HALL REVERB
2. ROOM REVERB
3. VOCAL REVERB
4. PLATE REVERB
5. LIVE REVERB
6. SE REVERB
7. GATE REVERB
8. TWIN DELAY
9. MONO DELAY
10. TRI PARA DELAY
11. TRI SERIES DELAY
12. ENSEMBLE
13. CHORUS
14. VIBRATO
15. FLANGER
16. PHASER
17. BI PHASE
18. TREMOLO
19. EQ

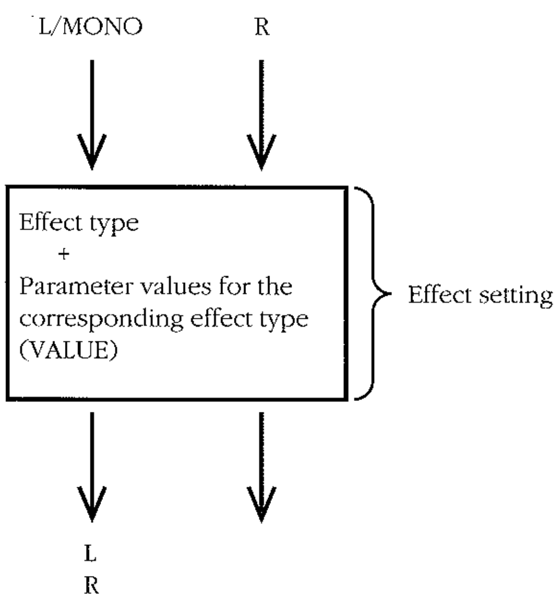
You can specify desired effect types from the ones listed above for each EFFECT SECTION and use them.

Example:



Note: You can specify the same effect type for all EFFECT SECTIONs if you want to.

All the 19 effect types have parameters (pg 5-4) which dictate the conditions regarding how each effect should be reproduced (for example, Reverb Time and Pre-delay). Therefore, each EFFECT SECTION contains, as a set, the information of one effect type and the parameter values on the effect conditions. This set of data is known as the effect setting.



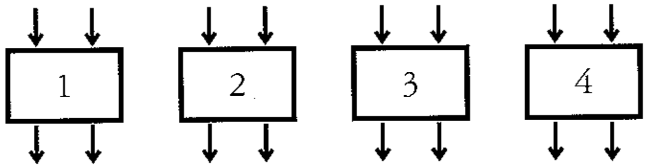
The RV-4 itself provides 19 kinds of effects. However, you can PROGRAM a very wide range of settings using the same effect type by varying the parameter values.

3. EFFECT SECTION Combinations

You can freely change the combination of each EFFECT SECTION within the RV-4. (pg 3-1)

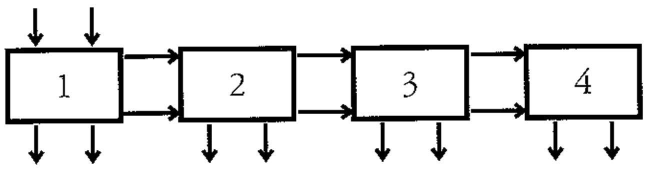
The output of an EFFECT SECTION with a smaller number can be input to an EFFECT SECTION with a bigger number as shown below. Using this capability, you can connect the EFFECT SECTIONs in parallel or serial, as you desire.

Example 1:



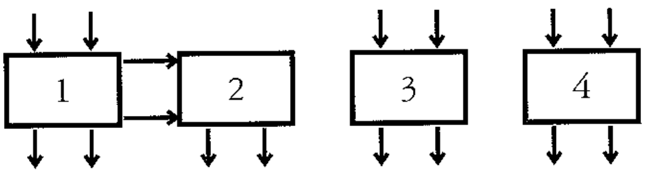
Parallel combination of 4 EFFECT SECTIONs

Example 2:

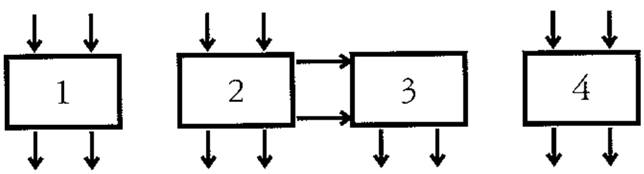


Serial combination of 4 EFFECT SECTIONs
In this case, INPUT jacks of effect sections 2, 3 and 4 will be ignored.

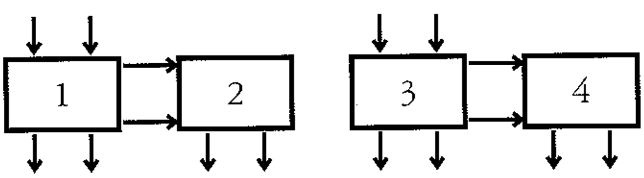
Example 3:



Example 4:



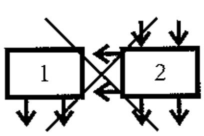
Example 5:



Serial and parallel combination (Examples 3–5)

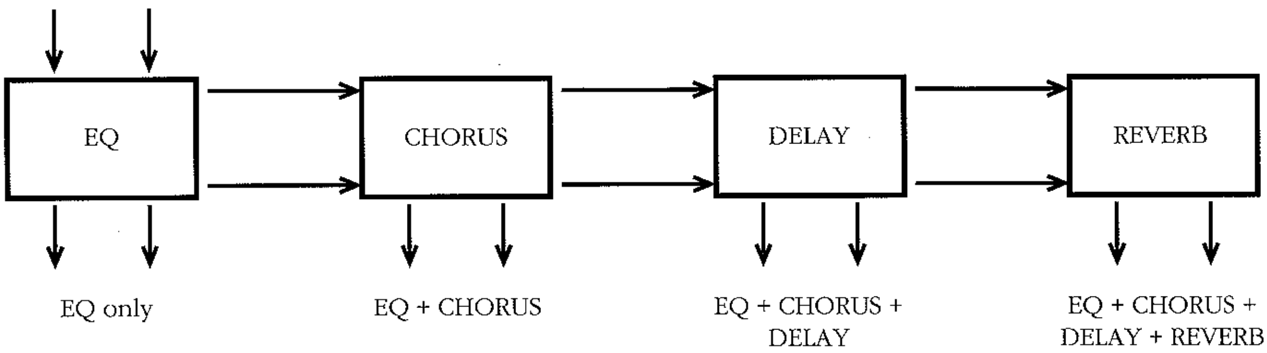
Note: The output of an EFFECT SECTION with a bigger number cannot be input to an EFFECT SECTION with a smaller number.

Example



When EFFECT SECTIONs are connected serially as in Example 2, the output of each EFFECT SECTION will be made together with all effects specified by EFFECT SECTIONs prior to that EFFECT SECTION.

The output of each EFFECT SECTION is illustrated below:

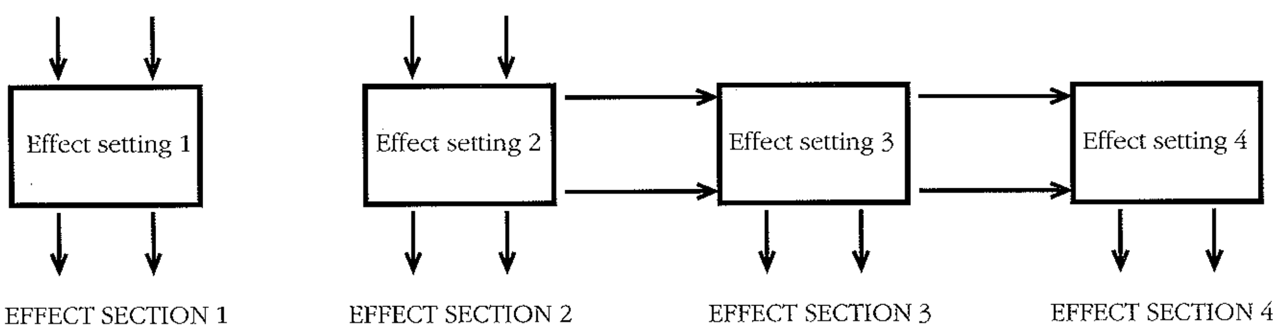


You can use the output in accordance with your purpose.

4. PROGRAM

A PROGRAM is a set of data which contains effect settings specified for the EFFECT SECTIONs and the combination of 4 EFFECT SECTIONs.

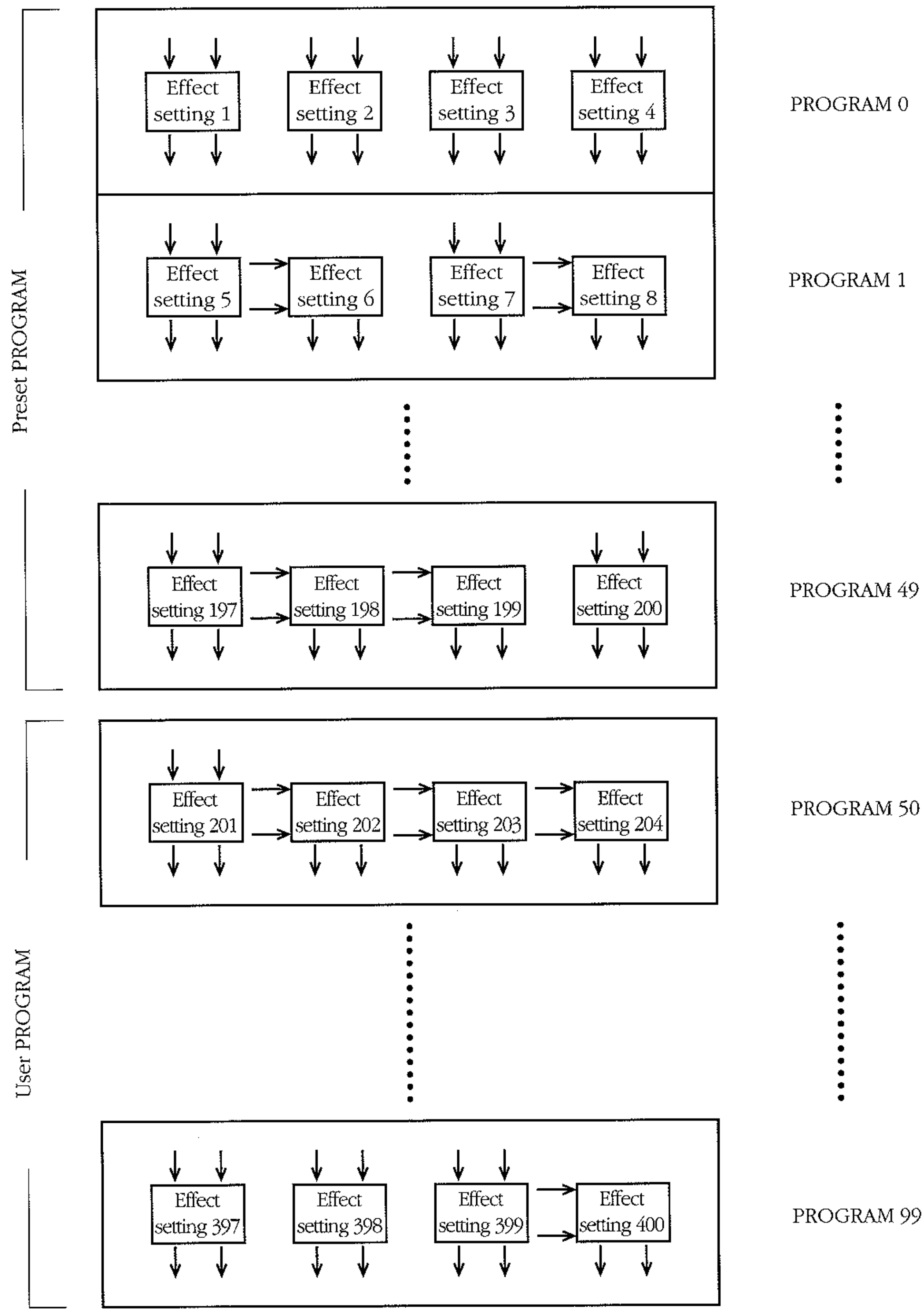
Example of a PROGRAM:



The RV-4 has 50 preset PROGRAMs. The RV-4 also has 50 user memory areas in which you can freely store and rewrite the PROGRAMs. Therefore, you can retrieve a total of 100 PROGRAMs in real-time.

Note: Since each PROGRAM contains 4 effect settings each, having 100 PROGRAMs means having 400 effect settings.

100 PROGRAMs and 400 effect settings



The RV-4 allows you to control 100 PROGRAMs from an external device using the MIDI program change data. Furthermore, you can control the effect settings in EFFECT SECTIONs without changing the connections of EFFECT SECTIONs. (pg 4-3)

5. PHONES Jack and MIX OUT Jack

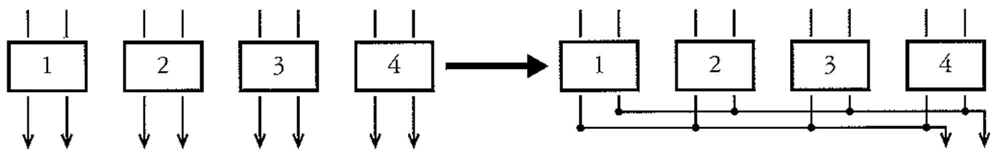
The PHONES jack (headphones jack) outputs the mixed signals of all 4 EFFECT SECTION outputs.

The OUTPUT 4 jack (EFFECT SECTION 4 output jack) can be used as a MIX OUT jack to mix the 4 EFFECT SECTION outputs.

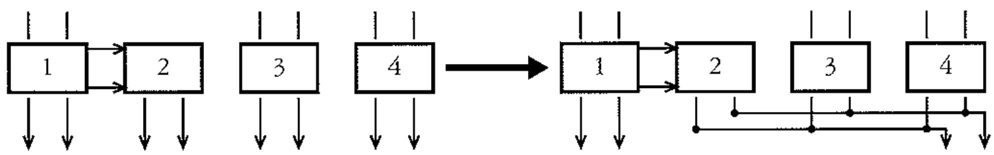
Enter the SYSTEM mode to select whether OUTPUT 4 jack is to be used for EFFECT SECTION 4 output or for MIX OUT.

When you set MIX OUT to ON in the SYSTEM mode, the connections will be as shown below.

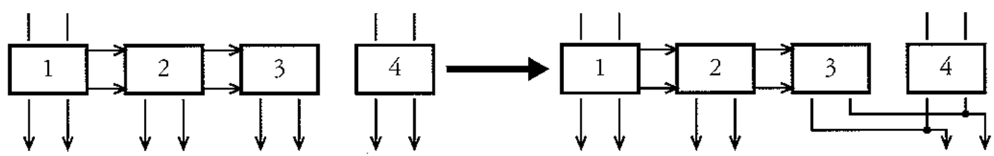
Connections when MIX OUT is OFF → Connections when MIX OUT is ON



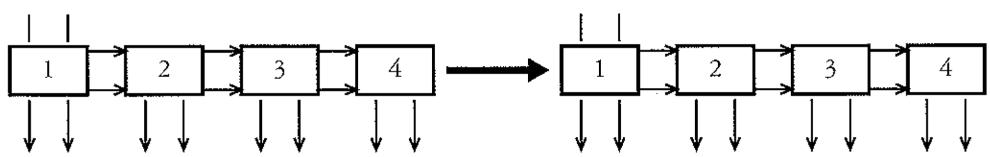
No output from OUTPUT 1 to 3 jacks



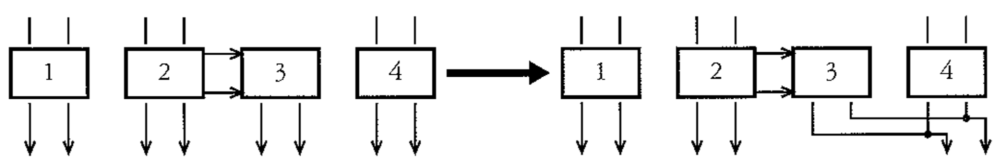
No output from OUTPUT 2 and 3 jacks



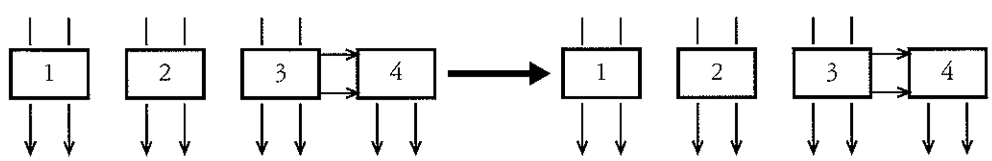
No output from OUTPUT 3 jack



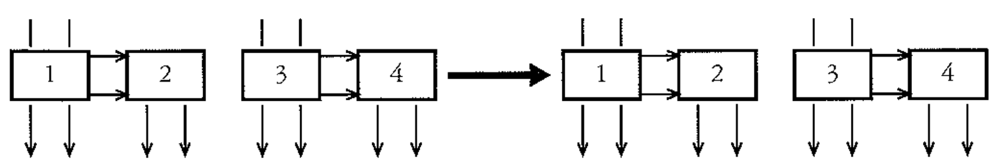
Same conditions as when MIX OUT is OFF



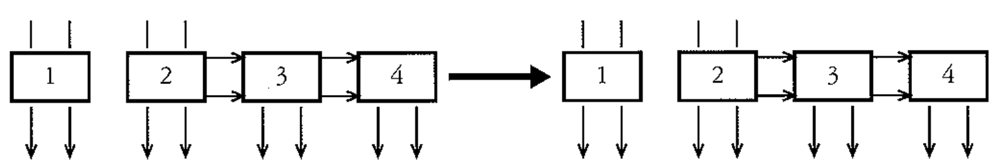
No output from OUTPUT 3 jack



Same conditions as when MIX OUT is OFF



Same conditions as when MIX OUT is OFF



Same conditions as when MIX OUT is OFF

As shown in the diagram above, the output conditions may sometimes remain the same depending on the combinations (algorithm) of the EFFECT SECTIONs, even when you change the MIX OUT ON/OFF setting.

6. DIGITAL IN/OUT Jacks

The RV-4 digital input/output complies with the AES/EBU digital audio interface format mode II for general consumer equipment.

1) When you have no equipment connected to the DIGITAL IN jack

The digital output conditions will be as follows:

Sampling frequency	48KHz
Emphasis	50/15 μs type or none (switchable from GC-8, always set to 50/15 μs Type at power ON)
Category code	General
Copy permit/inhibit	Permit
Audio/non-audio identification	Audio
Source number, channel number	No specification
Clock accuracy	Level II (Standard accuracy mode)
Channel mode	2-channel mode
Validity	Valid
User bit	Not used

2) When you have other equipment connected to the DIGITAL IN jack

A digital signal of the following format can be input to the DIGITAL IN jack.

Sampling frequency	48KHz
Emphasis	50/15 μs type or none
Audio/non-audio identification	Audio
Clock accuracy	Level I (High accuracy mode) or level II (Standard accuracy mode)
Channel mode	2-channel mode

The digital output will be as follows for the above digital input:

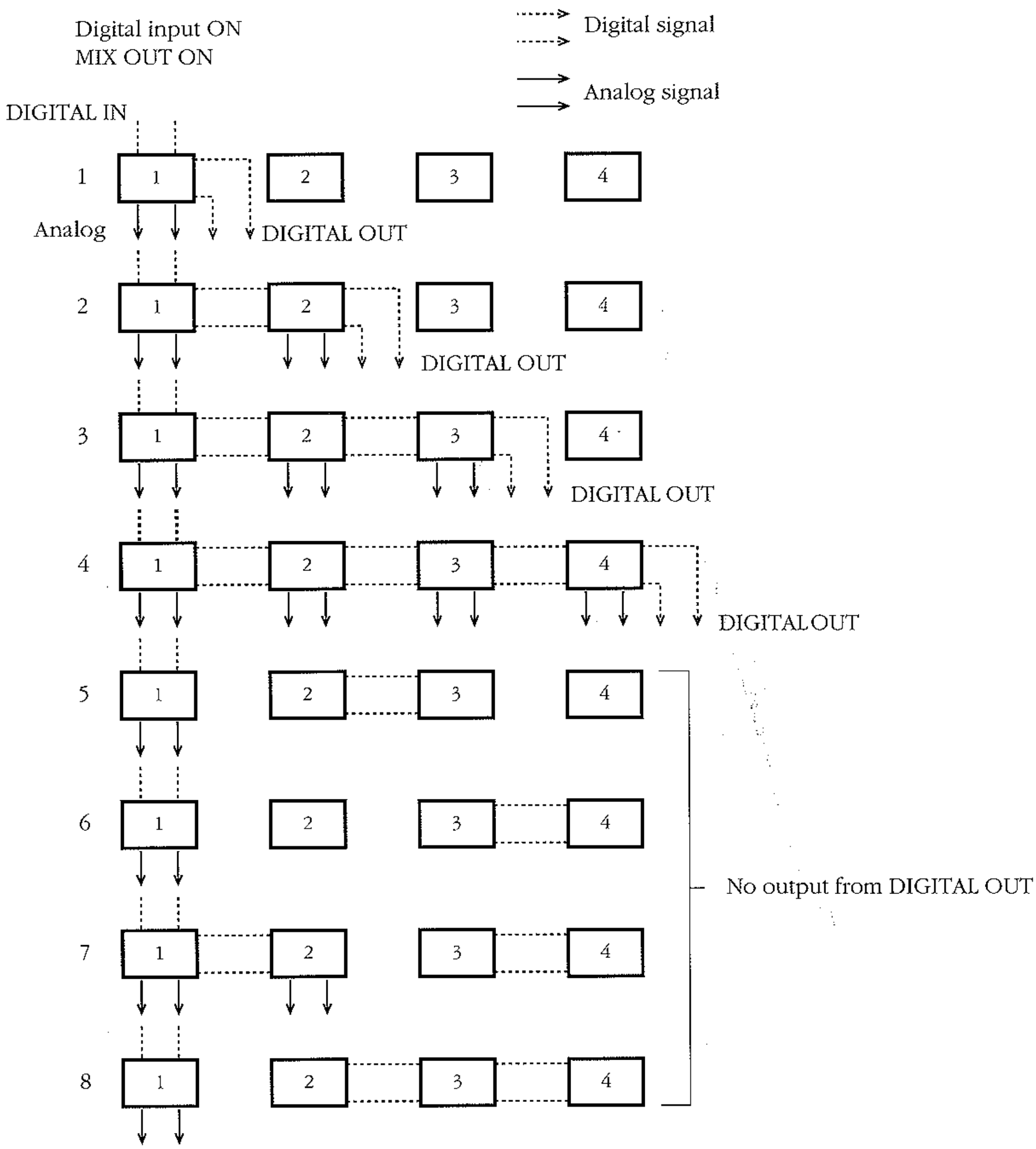
Sampling frequency	Same as input (48KHz)
Emphasis	Same as input (50/15 μs type or none)
Category code	Same as input
Copy permit/inhibit	Same as input
Audio/non-audio identification	Audio
Source number, channel number	Same as input
Clock accuracy	Same as input (Level I or level II)
Channel mode	2-channel mode
Validity	Same as input (Invalid until the operation becomes stable when other equipment is connected to the DIGITAL IN jack.)
User bit	Same as input.

3) DIGITAL IN

When you use the digital input, set digital input to ON in the SYSTEM mode (pg 2-6). When you set the digital input to ON, the INPUT 1–4 jacks will be disabled (input signals will be ignored). The DIGITAL IN jack will be connected to the EFFECT SECTION 1 input.

4) DIGITAL OUT

DIGITAL OUT can always make an output regardless of the digital input ON/OFF status.
The DIGITAL OUT jack is connected to the OUTPUT 4 jack (EFFECT SECTION 4 output jack)/MIX OUT jack. When the digital input is set to OFF, the DIGITAL OUT jack outputs the digital signal which is same as the analog signal being output from MIX OUT jack.
When digital input is set to ON, all analog input jacks are disabled and the input will be as follows:



As shown in the figure above, use connections 1 to 4 when DIGITAL IN/OUT is used. Connections 5 to 8 will not output signals from DIGITAL OUT.
The DIGITAL IN jack is connected to the INPUT 1 jack (EFFECT SECTION 1 input jack).
You can use both DIGITAL OUT and ANALOG OUT jacks simultaneously.
When the digital input is set to ON, the input/output relationship will be same even when the MIX OUT ON/OFF setting is changed.

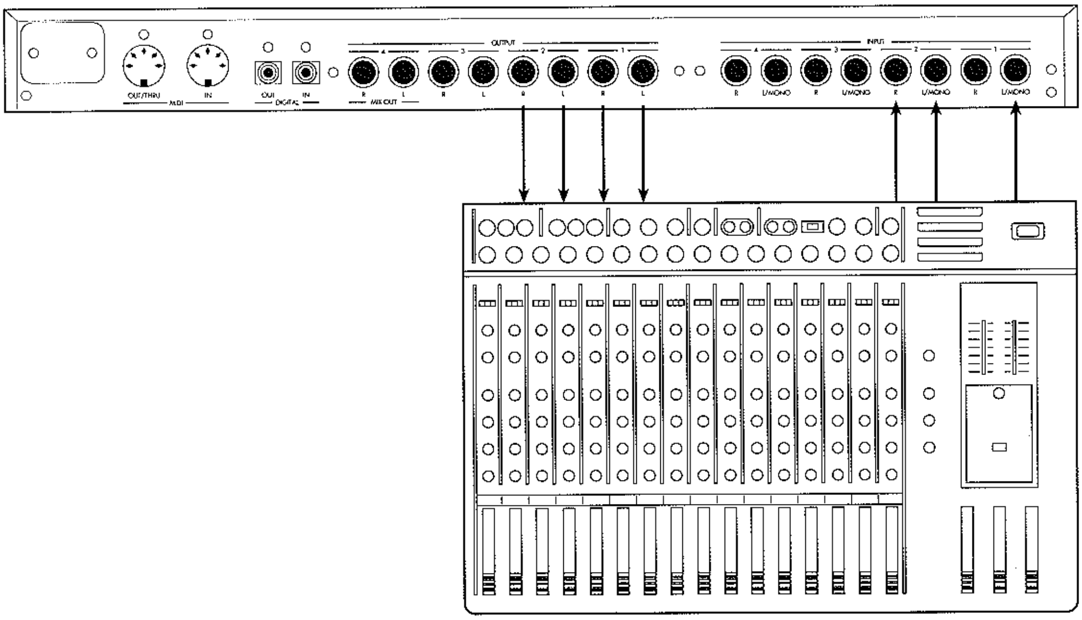
Note: When the connections of the EFFECT SECTIONs are as 5 to 8 in the above examples, no DIGITAL OUT signals for DIGITAL IN signals will be output.

Section II. Basic Operations

1. Connections

Connect the RV-4 as shown in the connection examples below according to the application.

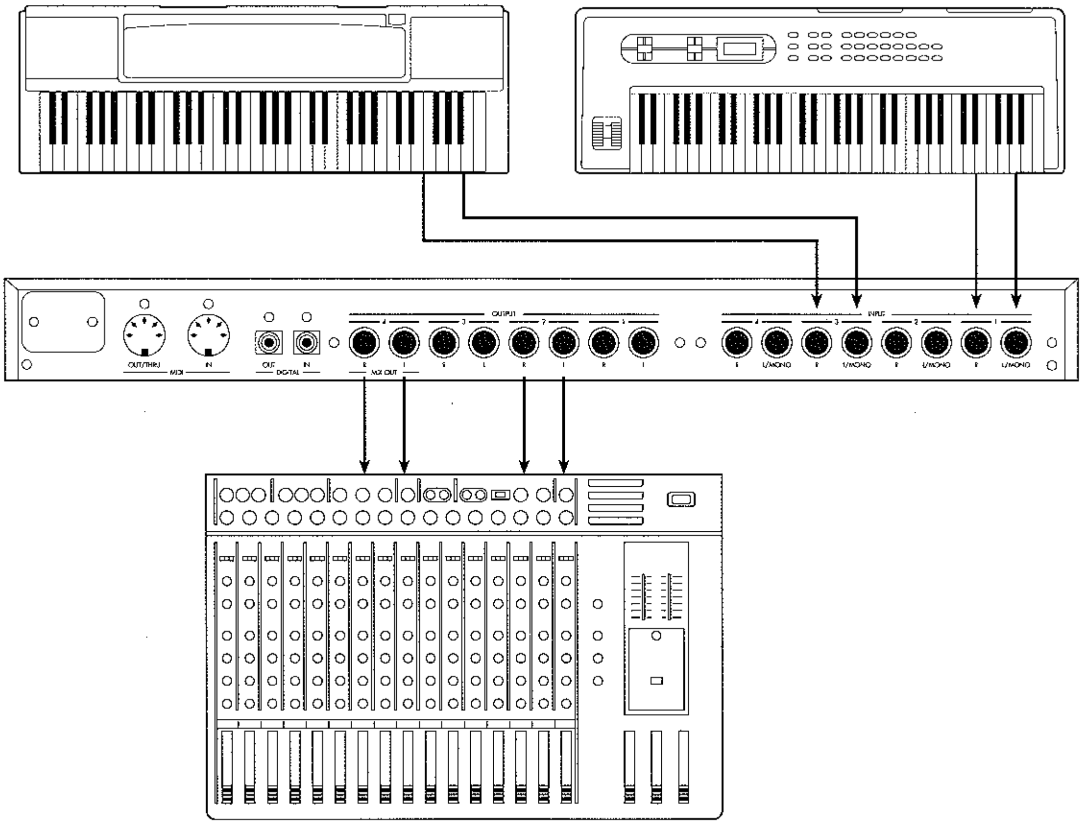
a) Connecting the RV-4 to SEND/RETURN of a mixer



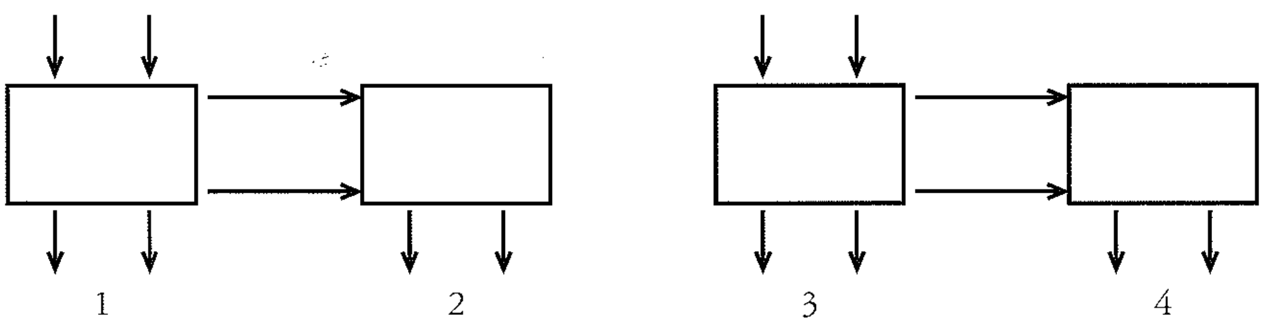
Notes:

- Adjust the input/output level in accordance with the level of the mixer to be connected. (pg 2-5)
- Connect the mixer to L(MONO) for the monaural input signals.

b) Connecting the RV-4 to a keyboard

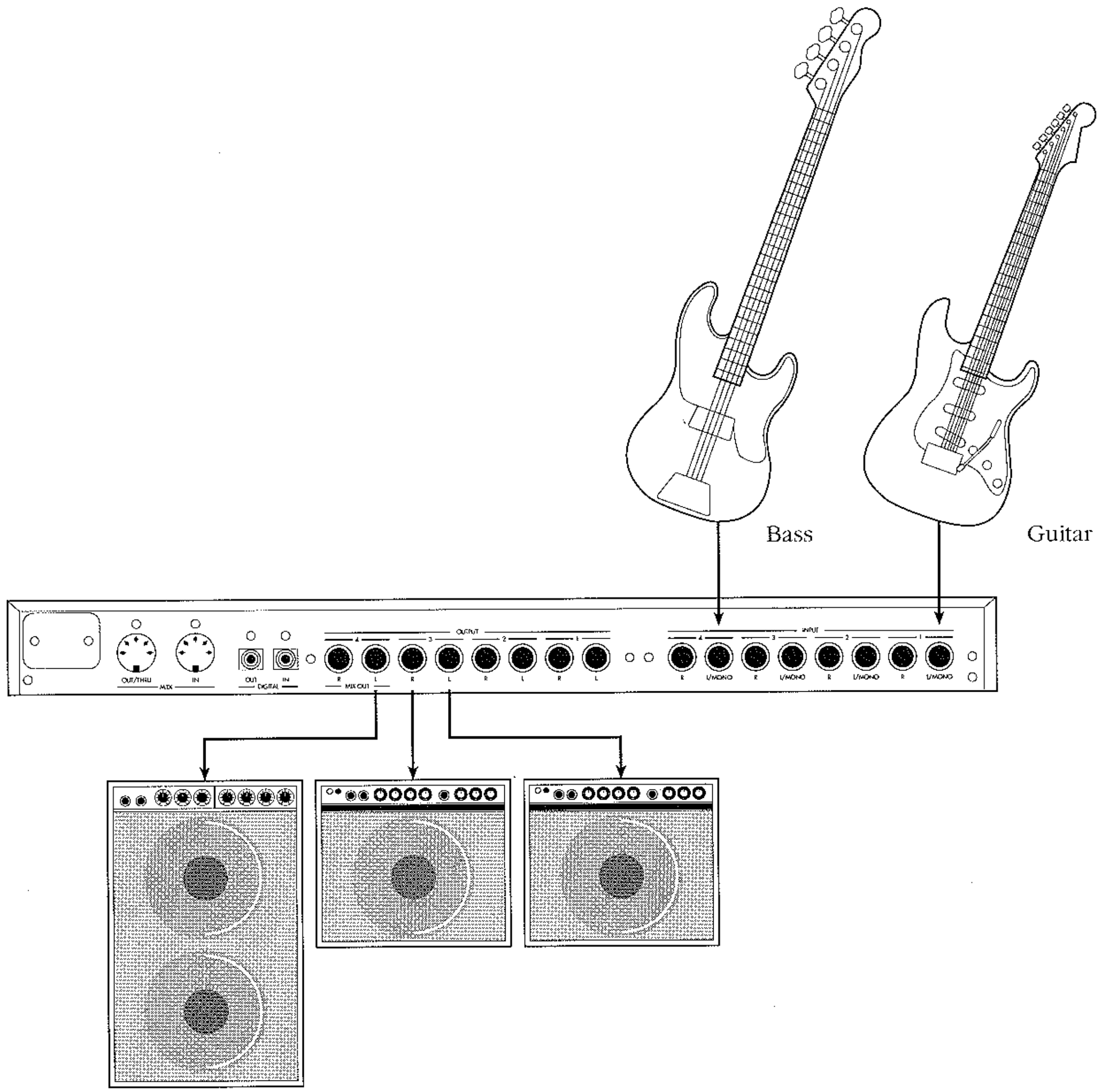


This example assumes that the program with the following EFFECT SECTION combination is used.



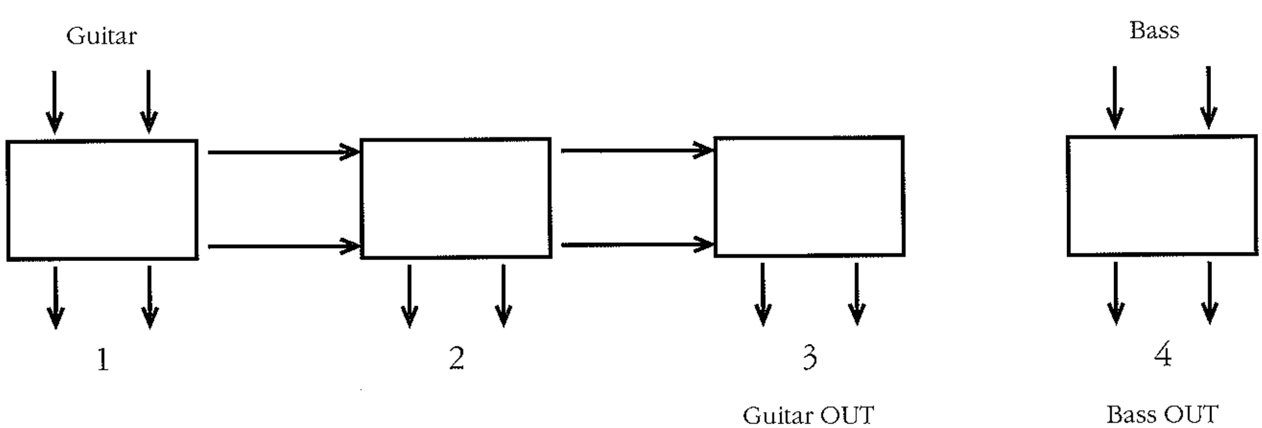
Note: When connecting a keyboard (module) to the RV-4, normally set the input level to "–20dBm". (pg 2-5)

c) Connecting the RV-4 to a guitar or bass



Note: When connecting a guitar (bass) to the RV-4, normally set the input level to "–20dBm". (pg 2-5)

This example assumes that the program with the following EFFECT SECTION combination is used.



2. Turning ON the Power (Initial Screen and Meanings of Messages)

■ Initial display screen

```
4 STEREO EFFECT
PROCESSORS RV-4
```

■ Several seconds later

```
 1       2
P00 4ParaReverbs
 RV1/RV2/RV3/RV4
 3 4 5 6 7 8 9
```

[1] PROGRAM number 00 to 99
[2] PROGRAM name
[3] Abbreviation of effect type of EFFECT SECTION 1 (pg 5-4)
[4] Connection method between EFFECT SECTIONs 1 and 2
Slash (/): Indicates no connection (parallel)
Equal sign (=):Indicates that the EFFECT SECTION 1output is connected to the EFFECT SECTION 2 input (serial)
[5], [7], [9], Abbreviation of effect types of EFFECT SECTIONs 2, 3, and 4
[6] Connection between EFFECT SECTIONs 2 and 3
[8] Connection between EFFECT SECTIONs 3 and 4

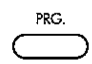
3. Selecting the PROGRAM Number

(1) Use the CURSOR (left and right arrow) switches and move the cursor to PROGRAM number [1].

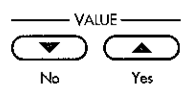
```
P00 4ParaReverbs
 RV1/RV2/RV3/RV4
```



Note: Pressing the PRG. switch moves the cursor directly to the PROGRAM number.



(2) Press the VALUE (up/down arrow) switches to select the PROGRAM number.



4. Using the BYPASS Switch

When you press the BYPASS switch, the BYPASS indicator lights and all 4 EFFECT SECTIONs are bypassed (output is made without adding effects to input signals).

Pressing the BYPASS switch again cancels the bypass mode and returns the RV-4 to the original mode.

(See pg 3-2 for the bypass setting for individual EFFECT SECTIONs.)

5. Adjusting the Input and Output Levels (-20, +4dBm)

■ Input

(1) To enter the SYSTEM mode, press the SYSTEM switch while the initial screen is displayed.

WRITE / SYSTEM

```
** SYSTEM **
WRITE SYS   MIDI
```

(2) Make sure that the cursor is displayed under "SYS." Press the SYSTEM switch once to enter the input level adjustment mode.

```
SYS INPUT LV dBm
 -20 -20  +4 -20
```

[1] [2] [3] [4]

[1] to [4]: Input levels (dBm) of corresponding EFFECT SECTIONs 1 to 4

(3) Move the cursor to the input level data of the EFFECT SECTION you want to adjust. Display the desired input level using the VALUE (up/down arrow) switches.

VALUE: ▼ No / ▲ Yes

```
SYS INPUT LV dBm
 -20  +4  +4 -20
```

■ Output

(1) To enter the system mode, press the SYSTEM switch while the initial screen is displayed.

WRITE / SYSTEM

```
** SYSTEM **
WRITE SYS   MIDI
```

(2) Make sure that the cursor is displayed under "SYS." Press the SYSTEM switch twice to enter the output level adjustment mode.

```
SYS OUTPT LV dBm
 -20 -20  +4 -20
```

[1] [2] [3] [4]

[1] to [4]: Output levels (dBm) of corresponding EFFECT SECTIONs 1 to 4

(3) Move the cursor to the input level data of the EFFECT SECTION you want to adjust. Display the desired input level using the VALUE (up/down arrow) switches.

VALUE: ▼ No / ▲ Yes

```
SYS OUTPT LV dBm
 -20  +4  +4 -20
```

6. Setting MIX OUT ON/OFF

The OUTPUT 4 jack (EFFECT SECTION 4 output jack) can be used as the MIX OUT jack which mixes 4 EFFECT SECTION output signals.

(1) To enter the SYSTEM mode, press the SYSTEM switch while the initial screen is displayed.

WRITE / SYSTEM

```
** SYSTEM **
WRITE SYS   MIDI
```

(2) Make sure that the cursor is displayed under "SYS." Press the SYSTEM switch 3 times to enter the MIX OUT ON/OFF setting mode.

```
SYS MIX OUT
          = ON
```

```
SYS MIX OUT
          =OFF
```

(3) Use the VALUE switches to display "ON" or "OFF."

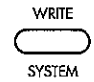
VALUE: ▼ No / ▲ Yes

Note: See page 1-6 for the connections of EFFECT SECTIONs when MIX OUT is set to ON and OFF.

7. Setting the Internal Memory Protect ON/OFF

Set the internal memory protect mode to ON when you want to disable rewriting of the user area contents. This setting will protect important data from being erased or overwritten by accident.

(1) To enter the SYSTEM mode, press the SYSTEM switch while the initial screen is displayed.



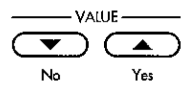

```
  ** SYSTEM **
WRITE SYS   MIDI
```

(2) Make sure that the cursor is displayed under "SYS." Press the SYSTEM switch 4 times to enter the memory protect ON/OFF setting mode.

```
SYS MEMORY
 PROTECT= ON
```

```
SYS MEMORY
 PROTECT=OFF
```

(3) Use the VALUE switches to display "ON" or "OFF."



8. Setting the Digital Input ON/OFF

Set the digital input setting to ON when you want to use the digital input. In that case, the eight analog input jacks (INPUT 1–4) are disabled (the input signals will be ignored).

See page 1-8 for digital input/output connections.

(1) To enter the system mode, press the SYSTEM switch while the initial screen is displayed.



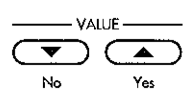

```
  ** SYSTEM **
 WRITE SYS MIDI
```

(2) Make sure that the cursor is displayed under "SYS." Press the SYSTEM switch 5 times to display the digital input ON/OFF setting screen.

```
SYS DIGITAL IN
         = ON
```

```
SYS DIGITAL IN
         =OFF
```

(3) Use the VALUE switches to display "ON" or "OFF."



Section III. Effect PROGRAM

1. Preset PROGRAM and User PROGRAM

The RV-4 has fifty (00 to 49) preset PROGRAMs in its memory. You can generate a PROGRAM by modifying the parameters based on these 50 PROGRAMs to create original effects that represent your ideas and images. After the PROGRAM is completed, you can save it to a desired location in the 50 user memory areas.

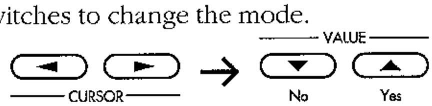
Cautions:

- A PROGRAM in the process of being created uses temporary memory space. If you change the PROGRAM number before writing (saving) the PROGRAM (pg 3-19), the data you just created will be lost.
- The same data is stored both in the 50 preset PROGRAMs and the 50 user PROGRAM memory areas at the factory before shipment.

2. Setting Each EFFECT SECTION to Effects or Bypass

Use the CURSOR switch and move the cursor to the EFFECT SECTION whose mode you want to change. Press the VALUE switches to change the mode.

```
P00 4ParaReverbs
RV1/RV2/RV3/RV4
```



Three asterisks (***) indicate the bypass. The input signals will be output as they are without effect treatment.

```
P00 4ParaReverbs
RV1/***/RV3/RV4
```

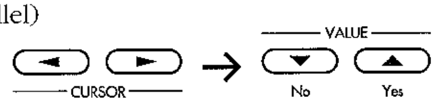
3. Changing the Connections of EFFECT SECTIONs

Use the CURSOR switch and move the cursor to the connection method indication ("/" or "=") that you want to change. Press the VALUE switches to display the desired indication.

```
P00 4ParaReverbs
RV1/RV2/RV3/RV4
```

Slash (/) : Indicates no connection (parallel)

Equal sign (=) : Serial connection




```
P00 4ParaReverbs
RV1=RV2/RV3/RV4
```

4. Adjusting the Balance of Direct Sound and Effect Sound of Each EFFECT SECTION

Press the EDIT switch once during the PROGRAM select mode to enter the balance adjustment mode.



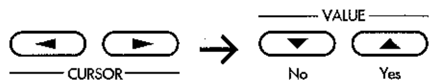
[1] PROGRAM number
[2] BALANCE mode indication
[3] to [6] Balance of direct sound and effect sound of EFFECT SECTIONs 1 to 4
You can move the cursor between [3] and [6].

```
[1]         [2]
P00  *BALANCE*
90%  50%  DRY  WET
[3]   [4]   [5]   [6]
```

Move the cursor to the EFFECT SECTION balance data you want to change. Press the VALUE switches to display the desired setting. The value will change in the following order:

DRY, 1% to 99%, and WET.

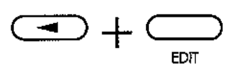
When the value increases, the effect sound balance will have more effect. The DRY setting is for direct input sound (same as bypass mode), and the WET setting is for effect sound only.



Press the PRG. switch to return to the PROGRAM select mode.



When you press the EDIT switch while pressing down the left CURSOR switch, the previous screen appears.



5. Adjusting the Output Level of Each EFFECT SECTION

To enter the output level adjustment mode of each EFFECT SECTION, press the EDIT switch while the balance display screen is shown.

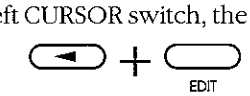
[1] PROGRAM number
[2] OUTPUT LEVEL mode indication
[3] to [6] Output level values (0 to 100) of EFFECT SECTIONs 1 to 4

```
[1]        [2]
P00  *OUTPUT LVL*
 15  100   95   80
[3]   [4]   [5]   [6]
```

Note: In a serial connection of the EFFECT SECTIONs, there is an external output and also an output to the next EFFECT SECTION. The output level values to be set in this function are effective for the external output only.

You can move the cursor between [3] and [6]. Move the cursor to the desired EFFECT SECTION output level data you want to change. Change the data using the VALUE switches.

When you press the EDIT switch while pressing down the left CURSOR switch, the previous screen appears.



6. Changing the Effect Type

The RV-4 features 19 kinds of effects. A 3-letter name abbreviation of the effect type in each EFFECT SECTION is displayed on the initial screen. (pg 5-4)

You can select the effect mode using this function. When you select an effect type, the default parameter values of the specified type are retrieved. (pg 5-4)

(1) At the EFFECT SECTION output level modification screen move the cursor to EFFECT SECTION data you want to change.

```
P00 *OUTPUT LVL*
 15 100  95  80
```

(2) Press the EDIT switch.

EDIT

```
                1
P00 *TYPE* (RV2)
E2  ROOM REV
2   3
```

1 Abbreviation of effect type name
2 Number of EFFECT SECTION whose effect type you want to change
3 Name of effect type

(3) Select the desired effect type using the VALUE switches. Both abbreviation of effect type name and name of effect type are changed simultaneously.

(4) To change the EFFECT SECTION number, use the CURSOR switches to move the cursor to that number and select the required number using the VALUE switches.

When you press the EDIT switch while pressing down the left CURSOR switch, the previous screen appears.

◄ + EDIT

7. Adjusting the Effect Parameters

To display the parameter name and its value for the corresponding effect mode, press the EDIT switch again while the effect type setting screen is on display.

```
1  2
E2 ROOM REV
REV TIME =  0.2s
   3          4
```

1 EFFECT SECTION number
2 Effect type name
3 Parameter name
4 Parameter value

EDIT

Use the CURSOR switches to move the cursor to two locations, (1) and (4), to change the EFFECT SECTION number and parameter value. Use the EDIT switch to select the parameter.

When you press the EDIT switch while pressing down the left CURSOR switch, the previous screen appears.

◄ + EDIT

8. Effect Type Functions

1) REVERB

The RV-4 provides 7 'reverb' type effects.
'Reverb' is short for reverberation. Reverberation of a sound is produced when reflected sounds (which occur due to the interference of various substances that exist in the space between the emission source of the sound and its reaching the listener) are piled on top of each other. By digital processing, the RV-4 simulates the elements which determine reverb characteristics such as space size and shape and interfering substances.

1. HALL REVERB

HALL REVERB simulates the reverberation of sound as it would occur in a hall.

```
P00 *TYPE* (RV1)
E1  HALL REV
```

- Reverb time: 0.1 to 20sec.
  (0.1 to 10sec.: 0.1sec. step, 10 to 20sec.: 1sec. step)
  Sets the period of reverberation.

```
E1  HALL REV
REV TIME = 10.0s
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects. A smaller setting value will dampen the higher band sound effect.

```
E1  HALL REV
HI DAMP  =   0.5
```

- Pre-delay: 0 to 200msec.
  (1 to 100msec.: 1msec. step, 100 to 200msec.: 10msec. step)
  Sets the period of direct sound reproduction until occurrence of sound reverberation.

```
E1  HALL REV
PRE DLY  = 200ms
```

- Low-pass filter: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound effect. The THRU setting disables the low-pass filter.

```
E1  HALL REV
LPF      = 12KHz
```

- High-pass filter: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied to a sound effect. The THRU setting disables the high-pass filter.

```
E1  HALL REV
HPF      = 120Hz
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1  HALL REV
SC. NAME =HALL 1
```

[1] ~ [6]

2. ROOM REVERB

ROOM REVERB simulates the reverberation of sound as it would occur in a room.

```
P00 *TYPE* (RV2)
E1  ROOM REV
```

- Reverb time: 0.1 to 10sec. (0.1sec. step)
  Sets the period of reverberation.

```
E1  ROOM REV
REV TIME = 10.0s
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects. A smaller setting value will dampen the higher band sound effect.

```
E1  ROOM REV
HI DAMP  =   0.5
```

- Pre-delay: 0 to 200msec.
  (1 to 100msec.: 1msec. step, 100 to 200msec.: 10msec. step)
  Sets the period of direct sound reproduction until occurrence of sound reverberation.

```
E1  ROOM REV
PRE DLY  = 200ms
```

- Low-pass filter: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound effect. The THRU setting disables the low-pass filter.

```
E1  ROOM REV
LPF      = 12KHz
```

- High-pass filter: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied to a sound effect. The THRU setting disables the high-pass filter.

```
E1   ROOM REV
HPF        = 120Hz
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1   ROOM REV
SC. NAME =ROOM 1
```

[1] ~ [6]

3. VOCAL REVERB

VOCAL REVERB simulates reverberation which is suitable for vocals.

```
P00 *TYPE* (RV3)
E1   VOCAL REV
```

- Reverb time: 0.1 to 10sec. (0.1sec. step)
  Sets the period of reverberation.

```
E1   VOCAL REV
REV TIME = 10.0s
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects. A smaller setting value will dampen the higher band sound effect.

```
E1   VOCAL REV
HI DAMP  =   0.5
```

- Pre-delay: 0 to 200msec.
  (1 to 100msec.: 1msec. step, 100 to 200msec.: 10msec. step)
  Sets the period of direct sound reproduction until occurrence of sound reverberation.

```
E1   VOCAL REV
PRE DLY  = 200ms
```

- Low-pass filter: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound effect. The THRU setting disables the low-pass filter.

```
E1   VOCAL REV
LPF        = 12KHz
```

- High-pass filter: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied to a sound effect. The THRU setting disables the high-pass filter.

```
E1   VOCAL REV
HPF        = 120Hz
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1   VOCAL REV
SC. NAME =VOCAL1
```

[1] ~ [6]

4. PLATE REVERB

PLATE REVERB simulates a plate echo (metallic sound echo).

```
P00 *TYPE* (RV4)
E1   PLATE REV
```

- Reverb time: 0.1 to 10sec. (0.1sec. step)
  Sets the period of reverberation.

```
E1   PLATE REV
REV TIME = 10.0s
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects. A smaller setting value will dampen the higher-band sound effect.

```
E1   PLATE REV
HI DAMP  =   0.5
```

- Pre-delay: 0 to 200msec.
  (1 to 100msec.: 1msec. step, 100 to 200msec.: 10msec. step)
  Sets the period of direct sound reproduction until occurrence of sound reverberation.

```
E1   PLATE REV
PRE DLY  = 200ms
```

- Low-pass filter: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound effect. The THRU setting disables the low-pass filter.

```
E1   PLATE REV
LPF        = 12KHz
```

- High-pass filter: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied to a sound effect. The THRU setting disables the high-pass filter.

```
E1  PLATE REV
HPF      = 120Hz
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1  PLATE REV
SC. NAME =PLATE1
```

[1] ~ [6]

5. LIVE REVERB

LIVE REVERB simulates the reverberation of sound as it would occur in a live performance.

```
P00 *TYPE* (RV5)
E1 LIVE REV
```

- Reverb time: 0.1 to 10sec. (0.1sec. step)
  Sets the period of reverberation.

```
E1 LIVE REV
REV TIME = 10.0s
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects. A smaller setting value will dampen the higher band sound effect.

```
E1 LIVE REV
HI DAMP  =   0.5
```

- Pre-delay: 0 to 200msec.
  (1 to 100msec.: 1msec. step, 100 to 200msec.: 10msec. step)
  Sets the period of direct sound reproduction until occurrence of sound reverberation.

```
E1 LIVE REV
PRE DLY  = 200ms
```

- Low-pass filter: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound effect. The THRU setting disables the low-pass filter.

```
E1  LIVE REV
LPF      = 12KHz
```

- High-pass filter: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied to a sound effect. The THRU setting disables the high-pass filter.

```
E1  LIVE REV
HPF      = 120Hz
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1 LIVE REV
SC. NAME =LIVE 1
```

[1] ~ [6]

6. SE REVERB

Sound Effect (SE) reverb is reverberation that would not otherwise occur in natural conditions.

```
P00 *TYPE* (RV6)
E1 SE REV
```

- Reverb time: 0.1 to 10sec. (0.1sec. step)
  Sets the period of reverberation.

```
E1 SE REV
REV TIME = 10.0s
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects. A smaller setting value will dampen the higher band sound effect.

```
E1 SE REV
HI DAMP  =   0.5
```

- Pre-delay: 0 to 200msec.
  (1 to 100msec.: 1msec. step, 100 to 200msec.: 10msec. step)
  Sets the period of direct sound reproduction until occurrence of sound reverberation.

```
E1 SE REV
PRE DLY  = 200ms
```

- Low-pass filter: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound effect. The THRU setting disables the low-pass filter.

```
E1 SE REV
LPF      = 12KHz
```

- High-pass filter: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied a sound effect. The THRU setting disables the high-pass filter.

```
E1 SE REV
HPF        = 120Hz
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1 SE REV
SC. NAME =SE    1
```

[1] ~ [6]

7. GATE REVERB

GATE REVERB cuts off the reverberation of sound at a midway point.

```
P00 *TYPE* (RV7)
E1  GATE REV
```

- Gate time: 20, 70, 130, 190, 250, 300, 360, 420ms, 8 steps
  Sets the period of sound reverberation until it is cut off.

```
E1  GATE REV
GATE TIME=  20ms
```

- Pre-delay: 0 to 200msec.
  (1 to 100msec.: 1msec. step, 100 to 200msec.: 10msec. step)
  Sets the period of direct sound reproduction until occurrence of sound reverberation.

```
E1 GATE REV
PRE DLY   = 200ms
```

- Low-pass filter: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound effect. The THRU setting disables the low-pass filter.

```
E1  GATE REV
LPF        = 12KHz
```

- High-pass filter: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied to a sound effect. The THRU setting disables the high-pass filter.

```
E1  GATE REV
HPF        = 120Hz
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1  GATE REV
SC. NAME =GATE 1
```

[1] ~ [6]

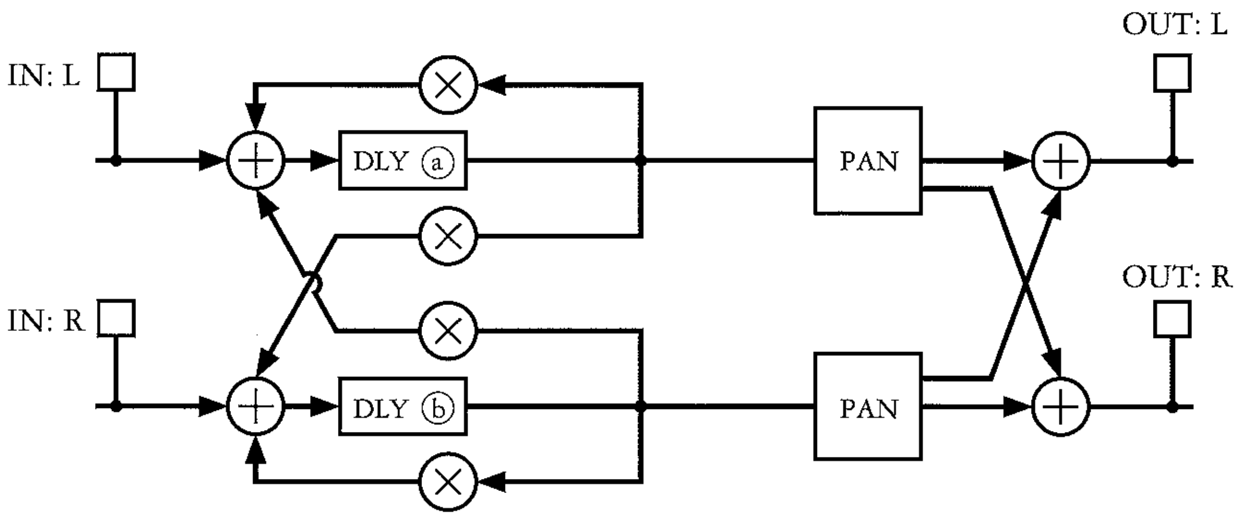
2) DELAY

The RV-4 provides 4 'delay' type effects.

1. TWIN DELAY

TWIN DELAY is a combination of two completely independent delays. The algorithm of the twin delay is illustrated below.

```
P00 *TYPE* (DL1)
E1  TWIN DLY
```



- Delay time of DLY ⓐ: EXT ♩ (quarter note), EXT ♪ (eighth note), EXT 𝅘𝅥𝅯(sixteenth note), 0 to 1,350ms
  (1 to 100msec.: 1msec. step, 100 to 1,350msec.: 10msec. step)
  Sets the delay time of DLY ⓐ. See page 4-5 for more information on "EXT" value.

```
E1  TWIN DLY
DLa TIME = 500ms
```

- Feedback of DLY ⓐ: 0 to 127 (1 step)
  Feedback means returning of the delay signal to the delay input. In this setting, the signal amount to be returned is specified. The number of delay repetitions will change.

```
E1  TWIN DLY
DLa FEED =   127
```

- Feedback from DLY ⓐ to DLY ⓑ: 0 to 127 (1 step)
  Sets the amount of the DLY ⓐ output signal to be fed to the DLY ⓑ input.

```
E1  TWIN DLY
a→b FEED =   127
```

- Low-pass filter of DLY ⓐ: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound delay. The THRU setting disables the low-pass filter.

```
E1  TWIN DLY
DLa LPF  = 12KHz
```

- High-pass filter of DLY ⓐ: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied to a sound delay. The THRU setting disables the high-pass filter.

```
E1  TWIN DLY
DLa HPF  =  THRU
```

- Pan of DLY ⓐ: L10 to L1, C (center), R1 to R10
  Localizes (pan potentiometer) the sound projection of the DLY ⓐ output.

```
E1  TWIN DLY
DLa PAN  =   L 9
```

- Effect level of DLY ⓐ: 0 to 127 (1 step)
  Sets the output sound level of the DLY ⓐ delay signal.

```
E1  TWIN DLY
DLa LEVL =   127
```

- Delay time of DLY ⓑ: EXT ♩ (quarter note), EXT ♪(eighth note), EXT 𝅘𝅥𝅯(sixteenth note), 0 to 1,350ms
  (0 to 100msec.: 1msec. step, 100 to 1,350msec.: 10msec. step)

  Sets the delay time of DLY ⓑ. See page 4-5 for more information on "EXT" value.

```
E1   TWIN DLY
DLb TIME = 500ms
```

- Feedback of DLY ⓑ: 0 to 127 (1 step)
  Feedback means returning of the delay signal to delay input. In this setting, the signal amount to be returned is specified. The number of delay repetitions will change.

```
E1   TWIN DLY
DLb FEED =    127
```

- Feedback from DLY b to DLY ⓐ: 0 to 127 (1 step)
  Sets the amount of the DLY ⓑ output signal to be fed to the DLY ⓐ input.

```
E1   TWIN DLY
b→a FEED =    127
```

- Low-pass filter of DLY ⓑ: 1KHz, 2KHz, 4KHz, 6KHz, 8KHz, 12KHz, THRU
  Sets the cutoff frequency of the low-pass filter to be applied to a sound delay. The THRU setting disables the low-pass filter.

```
E1   TWIN DLY
DLb LPF  = 12KHz
```

- High-pass filter of DLY ⓑ: THRU, 60Hz, 120Hz, 250Hz, 400Hz, 800Hz, 1KHz
  Sets the cutoff frequency of the high-pass filter to be applied to a sound delay. The THRU setting disables the high-pass filter.

```
E1   TWIN DLY
DLb HPF  =   THRU
```

- Pan of DLY ⓑ: L10 to L1, C (center), R1 to R10
  Localizes (pan potentiometer) the sound projection of the DLY ⓑ output.

```
E1   TWIN DLY
DLb PAN  =    L 9
```

- Effect level of DLY ⓑ: 0 to 127 (1 step)
  Sets the output sound level of the DLY ⓑ delay signal.

```
E1   TWIN DLY
DLb LEVL =    127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

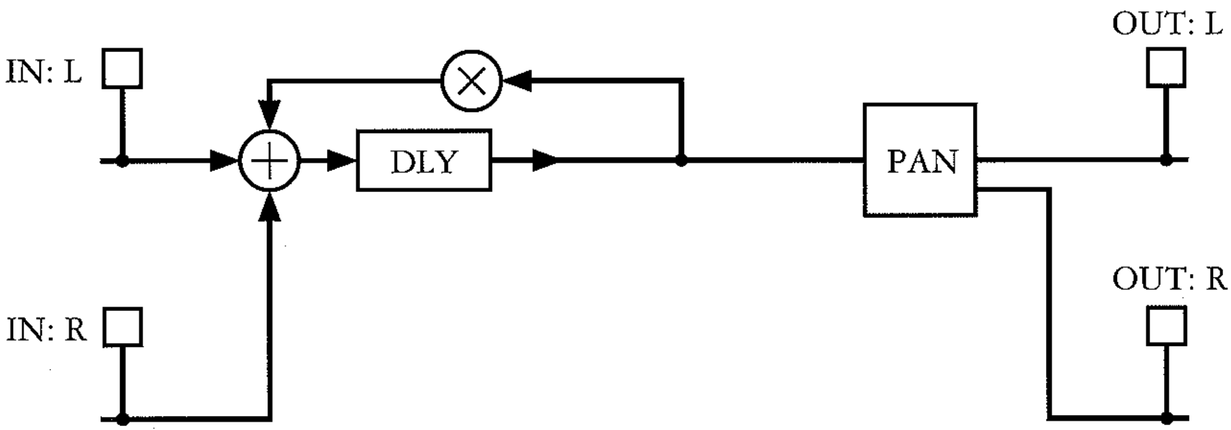
```
E1   TWIN DLY
SC. NAME =TWIN 1
```

[1] ~ [6]

2. MONO DELAY

MONO DELAY is a simple one-input, 2-output delay.

```
P00 *TYPE* (DL2)
E1  MONO DLY
```



- Delay time: EXT ♩(quarter note), EXT ♪(eighth note), EXT 𝅘𝅥𝅯(sixteenth note), 0 to 2,700ms
  (0 to 100msec.: 1msec. step, 100 to 1,500msec.: 10msec. step, 1,500 to 2,700msec.: 100msec. step)
  Sets the delay time of DLY. See page 4-5 for more information on "EXT" value.

```
E1  MONO DLY
DLY TIME = 600ms
```

- Feedback: 0 to 127 (1 step)
  Feedback means returning of the delay signal to the delay input. In this setting, the signal amount to be returned is specified. The number of delay repetitions will change.

```
E1  MONO DLY
FEEDBACK =   100
```

- Pan: L10 to L1, C (center), R1 to R10
  Localizes (pan potentiometer) the sound projection of the DLY output.

```
E1  MONO DLY
PAN      =   R10
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects. A smaller setting value will dampen the higher band sound effect.

```
E1  MONO DLY
HI DAMP  =   0.1
```

- Effect level: 0 to 127 (1 step)
  Sets the output sound level of the delay signal.

```
E1  MONO DLY
EFF LEVL =   127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

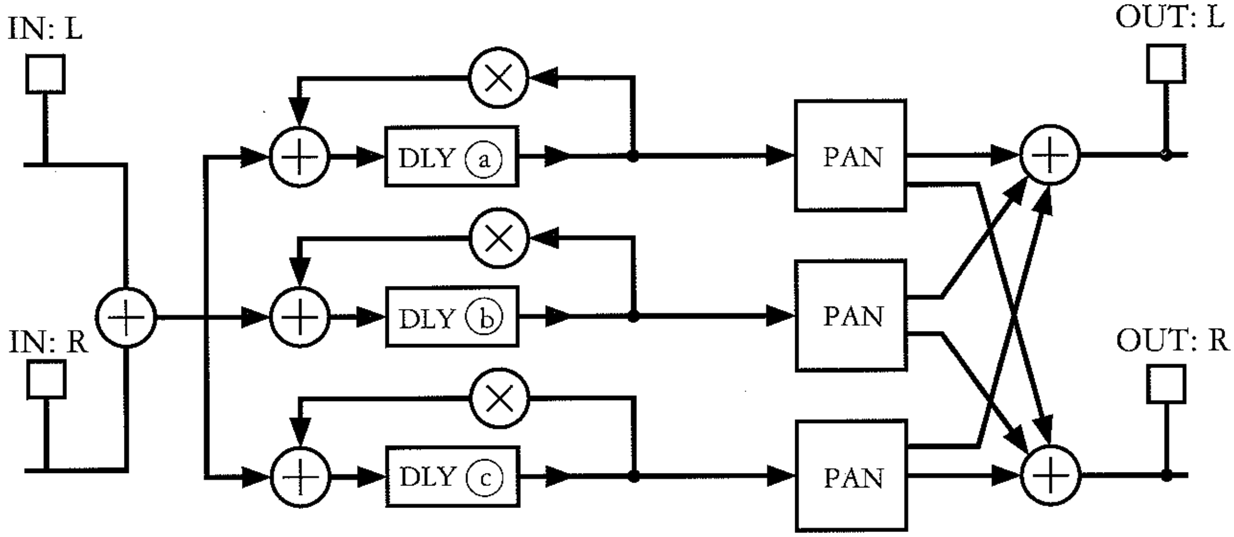
```
E1  MONO DLY
SC. NAME =MONO 1
```

[1] ~ [6]

3. TRI PARA DELAY

TRI PARA DELAY is a parallel configuration of three delay effects.

```
P00 *TYPE* (DL3)
E1  TRI PAR DLY
```



- Delay time of DLY ⓐ: EXT ♩ (quarter note), EXT ♪ (eighth note), EXT 𝅘𝅥𝅯 (sixteenth note), 0 to 900msec.
  (0 to 100msec.: 1msec. step, 100 to 900msec.: 10msec. step)
  Sets the delay time of DLY ⓐ. See page 4-5 for more information on EXT quarter note.

```
E1  TRI PAR DLY
DLa TIME = 600ms
```

- Feedback of DLY ⓐ: 0 to 127 (1 step)
  Feedback means returning of the delay signal to the delay input. In this setting, the signal amount to be returned is specified. The number of delay repetitions will change.

```
E1  TRI PAR DLY
DLa FEED =   127
```

- Pan of DLY ⓐ: L10 to L1, C (center), R1 to R10
  Localizes (pan potentiometer) the sound projection of the DLY ⓐ output.

```
E1  TRI PAR DLY
DLa PAN  =     C
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects of DLY ⓐ. A smaller setting value will dampen the higher band sound effect.

```
E1  TRI PAR DLY
DLa DAMP =   0.1
```

- Effect level of DLY ⓐ: 0 to 127 (1 step)
  Sets the output sound level of the DLY ⓐ delay signal.

```
E1  TRI PAR DLY
DLa LEVEL=   127
```

- Delay time of DLY ⓑ: EXT ♩ (quarter note), EXT ♪ (eighth note), EXT 𝅘𝅥𝅯 (sixteenth note), 0 to 900msec.
  (0 to 100msec.: 1msec. step, 100 to 900msec.: 10msec. step)
  Sets the delay time of DLY ⓑ. See page 4-5 for more information on "EXT" value.

```
E1  TRI PAR DLY
DLb TIME = 600ms
```

- Feedback of DLY ⓑ: 0 to 127 (1 step)
  Feedback means returning of the delay signal to the delay input. In this setting, the signal amount to be returned is specified. The number of delay repetitions will change.

```
E1  TRI PAR DLY
DLb FEED =   127
```

- Pan of DLY ⓑ: L10 to L1, C (center), R1 to R10
  Localizes (pan potentiometer) the sound projection of the DLY ⓑ output.

```
E1  TRI PAR DLY
DLb PAN  =   R10
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects of DLY ⓑ. A smaller setting value will dampen the higher band sound effect.

```
E1  TRI PAR DLY
DLb DAMP =   0.1
```

- Effect level of DLY ⓑ: 0 to 127 (1 step)
  Sets the output sound level of the DLY ⓑ delay signal.

```
E1  TRI PAR DLY
DLb LEVEL=   127
```

- Delay time of DLY ⓒ: EXT ♩ (quarter note), EXT ♪ (eighth note), EXT 𝅘𝅥𝅯 (sixteenth note), 0 to 900msec.
  (0 to 100msec.: 1msec. step, 100 to 900msec.: 10msec. step)
  Sets the delay time of DLY ⓒ. See page 4-5 for more information on "EXT" value.

```
E1  TRI PAR DLY
DLc TIME = 600ms
```

- Feedback of DLY ⓒ: 0 to 127 (1 step)
  Feedback means returning of the delay signal to the delay input. In this setting, the signal amount to be returned is specified. The number of delay repetitions will change.

```
E1  TRI PAR DLY
DLc FEED =   127
```

- Pan of DLY ⓒ: L10 to L1, C (center), R1 to R10 Localizes (pan potentiometer) the sound projection of the DLY ⓒ output.

```
E1  TRI PAR DLY
DLc PAN  =   R10
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects of DLY ⓒ. A smaller setting value will dampen the higher band sound effect.

```
E1  TRI PAR DLY
DLc DAMP =   0.1
```

- Effect level of DLY ⓒ: 0 to 127 (1 step)
  Sets the output sound level of the DLY ⓒ delay signal.

```
E1  TRI PAR DLY
DLc LEVEL=   127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

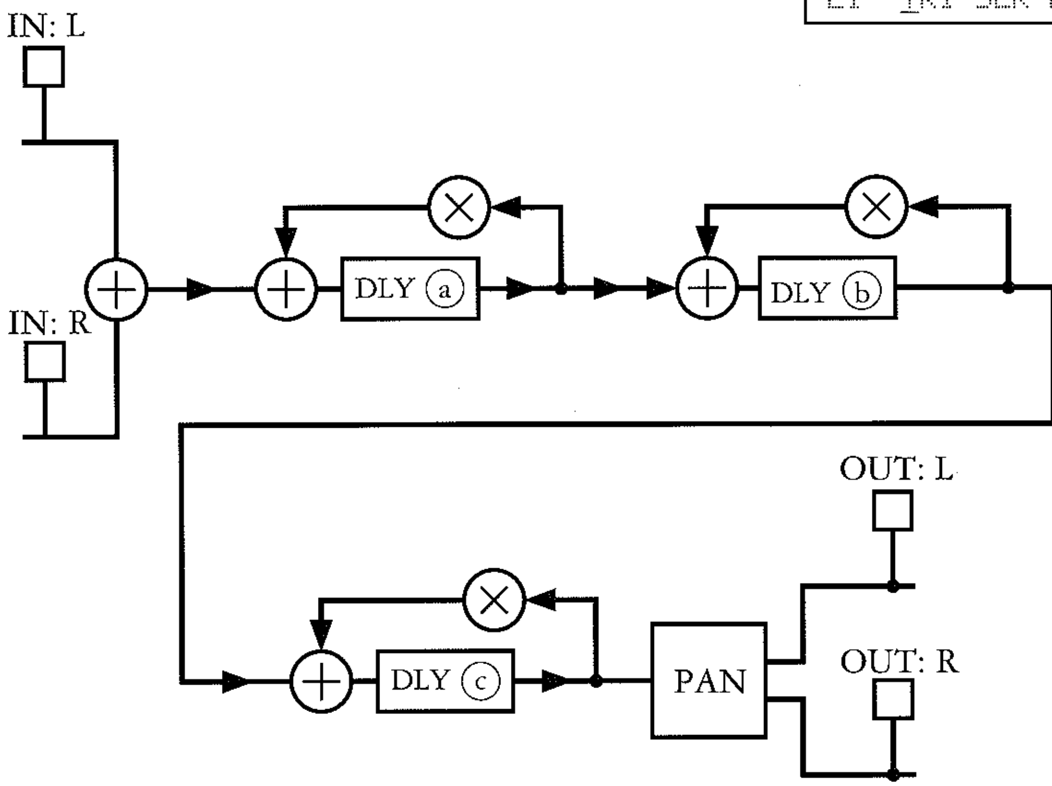
```
E1  TRI PAR DLY
SEC NAME =TPDLY1
```

[1] ~ [6]

4. TRI SERIES DELAY

TRI SERIES DELAY is a series configuration of three delay effects.

```
P00 *TYPE* (DL4)
E1  TRI SER DLY
```



- Delay time of DLY ⓐ: EXT ♩ (quarter note), EXT ♪ (eighth note), EXT 𝅘𝅥𝅯 (sixteenth note), 0 to 900msec.
  (0 to 100msec.: 1msec. step, 100 to 900msec.: 10msec. step)
  Sets the delay time of DLY ⓐ. See page 4-5 for more information on "EXT" value.

```
E1  TRI SER DLY
DLa TIME = 600ms
```

- Feedback of DLY ⓐ: 0 to 127 (1 step)
  Feedback means returning of the delay signal to the delay input. In this setting, the amount to be returned is specified. The number of delay repetitions will change.

```
E1  TRI SER DLY
DLa FEED =   127
```

- Pan of DLY ⓐ: L10 to L1, C (center), R1 to R10
  Localizes (pan potentiometer) the sound projection of the DLY ⓐ output.

```
E1  TRI SER DLY
DLa PAN  =   R10
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects of DLY ⓐ. A smaller setting value will dampen the higher band sound effect.

```
E1  TRI SER DLY
DLa DAMP =   0.1
```

- Effect level of DLY ⓐ: 0 to 127 (1 step)
  Sets the output sound level of the DLY ⓐ delay signal.

```
E1  TRI SER DLY
DLa LEVL =   127
```

- Delay time of DLY ⓑ: EXT ♩ (quarter note), EXT ♪ (eighth note), EXT 𝅘𝅥𝅯 (sixteenth note), 0 to 900msec.
  (0 to 100msec.: 1msec. step, 100 to 900msec.: 10msec. step)
  Sets the delay time of DLY ⓑ. See page 4-5 for more information on "EXT" value.

```
E1  TRI SER DLY
DLb TIME = 600ms
```

- Feedback of DLY ⓑ: 0 to 127 (1 step)
  Feedback means returning the delay signal to the delay input. In this setting, the signal amount to be returned is specified. The number of delay repetitions will change.

```
E1   TRI SER DLY
DLb FEED =    127
```

- Pan of DLY ⓑ: L10 to L1, C (center), R1 to R10
  Localizes (pan potentiometer) the sound projection of the DLY ⓑ output.

```
E1   TRI SER DLY
DLb PAN  =    R10
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects of DLY ⓑ. A smaller setting value will dampen the higher band sound effect.

```
E1   TRI SER DLY
DLb DAMP =    0.1
```

- Effect level of DLY ⓑ: 0 to 127 (1 step)
  Sets the output sound level of the DLY ⓑ delay signal.

```
E1   TRI SER DLY
DLb LEVEL=    127
```

- Delay time of DLY ⓒ: EXT ♩ (quarter note), EXT ♪ (eighth note), EXT 𝅘𝅥𝅯 (sixteenth note), 0 to 900msec.
  (0 to 100msec.: 1msec. step, 100 to 900msec.: 10msec. step)
  Sets the delay time of DLY ⓒ. See page 4-5 for more information on "EXT" value.

```
E1   TRI SER DLY
DLc TIME = 600ms
```

- Feedback of DLY ⓒ: 0 to 127 (1 step)
  Feedback means returning of the delay signal to the delay input. In this setting, the signal amount to be returned is specified. The number of delay repetitions will change.

```
E1   TRI SER DLY
DLc FEED =    127
```

- Pan of DLY ⓒ: L10 to L1, C (center), R1 to R10
  Localizes (pan potentiometer) the sound projection of the DLY ⓒ output.

```
E1   TRI SER DLY
DLc PAN  =    R10
```

- High damp: 0.1 to 1.0 (0.1 step)
  Sets the degree of damping high-band sound effects of DLY ⓒ. A smaller setting value will dampen the higher band sound effect.

```
E1   TRI SER DLY
DLc DAMP =    0.1
```

- Effect level of DLY ⓒ: 0 to 127 (1 step)
  Sets the output sound level of the DLY ⓒ delay signal.

```
E1   TRI SER DLY
DLc LEVL =    127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1   TRI SER DLY
SEC NAME =TPDLY1
```

[1] ~ [6]

Note: If you specify zero ("0") for either one of effect level settings for the TRI SERIES DELAY effect, the sound effect will not be output.

3) Other effect types

The RV-4 provides another 8 effect types such as CHORUS, VIBRATO, and EQ besides REVERB and DELAY.

1. ENSEMBLE

ENSEMBLE adds a slightly delayed pitch (music intervals) to a direct sound to create width and depth.

```
P00 *TYPE* (ENS)
E1 ENSEMBLE
```

- Rate: 0 to 127 (1 step)
  Sets the cycle for modulating ensemble.

```
E1 ENSEMBLE
RATE       =   127
```

- Depth: 0 to 127 (1 step)
  Sets the depth for modulating ensemble.

```
E1 ENSEMBLE
DEPTH      =   127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1 ENSEMBLE
SEC NAME =ENSBL1
```

[1] ~ [6]

2. CHORUS

CHORUS works using the same principle as ENSEMBLE. CHORUS, however, adds a natural effect which suppresses vibrations.

```
P00 *TYPE* (CHO)
E1 CHORUS
```

- Rate: 0 to 127 (1 step)
  Sets the cycle for modulating chorus.

```
E1 CHORUS
RATE       =   127
```

- Depth: 0 to 127 (1 step)
  Sets the depth for modulating chorus.

```
E1 CHORUS
DEPTH      =   127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1 CHORUS
SEC NAME =CHORS1
```

[1] ~ [6]

3. VIBRATO

VIBRATO also works using the same principle as ENSEMBLE. VIBRATO, however, adds a special effect which emphasizes vibrations.

```
P00 *TYPE* (VIB)
E1 VIBRATO
```

- Rate: 0 to 127 (1 step)
  Sets the cycle for modulating vibrato.

```
E1 VIBRATO
RATE       =   127
```

- Depth: 0 to 127 (1 step)
  Sets the depth for modulating vibrato.

```
E1 VIBRATO
DEPTH      =   127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1 VIBRATO
SEC NAME =VIBRT1
```

[1] ~ [6]

4. FLANGER

FLANGER adds a slightly delayed pitch (music intervals) to a direct sound to simulate a flanging effect similar to the take-off and landing sounds of jet planes.

```
P00 *TYPE* (FLN)
E1  FLANGER
```

- Rate: 0 to 127 (1 step)
  Sets the cycle for modulating flanger.

```
E1  FLANGER
RATE      =   127
```

- Depth: 0 to 127 (1 step)
  Sets the depth for modulating flanger.

```
E1  FLANGER
DEPTH     =   127
```

- Resonance: 0 to 127 (1 step)
  Sets the resonance amount of flanger. A higher setting value causes a more distinct sound reproduction.

```
E1  FLANGER
RESONANCE=    127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1  FLANGER
SEC NAME =FLANG1
          [1] ~ [6]
```

5. PHASER

PHASER adds slightly delayed phase to a direct sound to create a wider sound with a pulsation.

```
P00 *TYPE* (PH1)
E1  PHASER
```

- Rate: 0 to 127 (1 step)
  Sets the cycle for applying the phase effect.

```
E1  PHASER
RATE      =   127
```

- Depth: 0 to 127 (1 step)
  Sets the depth for applying the phase effect.

```
E1  PHASER
DEPTH     =   127
```

- Resonance: 0 to 127 (1 step)
  Sets the resonance amount of phase. A higher setting value causes a more distinct sound reproduction.

```
E1  PHASER
RESONANCE=    127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the character using the VALUE switches.

```
E1  PHASER
SEC NAME =PHASE1
          [1] ~ [6]
```

6. BI PHASE

BI PHASE adds a slightly delayed 2-phase to a direct sound to create an even more powerful phase effect than PHASER.

```
P00 *TYPE* (PH2)
E1  BI PHASE
```

- Rate: 0 to 127 (1 step)
  Sets the cycle for applying the phase effect.

```
E1  BI PHASE
RATE      =   127
```

- Depth: 0 to 127 (1 step)
  Sets the depth for applying the phase effect.

```
E1  BI PHASE
DEPTH     =   127
```

- Resonance: 0 to 127 (1 step)
  Sets the resonance amount of phase. A higher setting value causes a more distinct sound reproduction.

```
E1  BI PHASE
RESONANCE=    127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1   BI PHASE
SEC NAME =Bi-PH1
```
[1] ~ [6]

7. TREMOLO

TREMOLO simulates the tremolo effect which makes the sound swing from side to side.

```
P00 *TYPE* (TRM)
E1   TREMOLO
```

- Rate: 0 to 127 (1 step)
  Sets the cycle for modulating tremolo.

```
E1   TREMOLO
RATE       =   127
```

- Depth: 0 to 127 (1 step)
  Sets the depth for modulating tremolo.

```
E1   TREMOLO
DEPTH      =   127
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1   TREMOLO
SEC NAME =TREM 1
```
[1] ~ [6]

8. EQ

EQ is a three-band equalizer. The center frequency of the middle band is variable, and L and R can be adjusted individually.

```
P00 *TYPE* (EQ )
E1   EQ
```

- Low-level (L): -12 to +12dB (100Hz)
  Sets the low-band sound quality of channel L.

```
E1   EQ
LO LVL-L = +12dB
```

- Low-level (R): -12 to +12dB (100Hz)
  Sets the low-band sound quality of channel R.

```
E1   EQ
LO LVL-R = +12dB
```

- Midpoint (L): 250Hz, 400Hz, 630Hz, 1KHz, 1.6KHz, 2.5KHz, 4KHz
  Sets the center frequency of the middle-band of channel L.

```
E1   EQ
MD FRQ-L =   4KHz
```

- Midpoint (R): 250Hz, 400Hz, 630Hz, 1KHz, 1.6KHz, 2.5KHz, 4KHz
  Sets the center frequency of the middle-band of channel R.

```
E1   EQ
MD FRQ-R =   4KHz
```

- Mid-level (L): -12 to +12dB
  Sets the middle-band sound quality of channel L.

```
E1   EQ
MD LVL-L = +12dB
```

- Mid-level (R): -12 to +12dB
  Sets the middle-band sound quality of channel R.

```
E1   EQ
MD LVL-R = +12dB
```

- High-level (L): -12 to +12dB (10KHz)
  Sets the high-band sound quality of channel L.

```
E1   EQ
HI LVL-L = +12dB
```

- High-level (R): -12 to +12dB (10KHz)
  Sets the high-band sound quality of channel R.

```
E1   EQ
HI LVL-R = +12dB
```

- EFFECT SECTION name:
  Move the cursor to positions [1] to [6] and enter the characters using the VALUE switches.

```
E1   EQ
SEC NAME =EQ    1
```
[1] ~ [6]

9. Copying the Effect Setting

The RV-4 can store 400 effect settings in its memory. When you create a PROGRAM , you can copy a desired effect setting (already in the RV-4) for the EFFECT SECTION of the PROGRAM you are currently programming.

(1) Press the EDIT switch while the name setting screen of each effect setting is on display.

EDIT

[1]

```
Copy To        E1
Fr P00 E1 UNIT01
```

[2] [3] [4]

(2) Use the CURSOR and VALUE switches to specify a copy source and copy destination.

[1] EFFECT SECTION number of the copy destination (The PROGRAM number is the one which is currently being edited.)

[2] PROGRAM number of copy source

[3] EFFECT SECTION number of the copy source

[4] EFFECT SECTION name of the copy source

You can move the cursor between [1] and [3].

(3) Press the EDIT switch. The prompt "SURE?" will appear.

```
Copy To        E1
     SURE?(Y/N)
```

(4) Press the Yes switch to execute the copying operation. Or, press NO to cancel the operation.

Yes

```
COMPLETED!
```

No

```
CANCELED!
```

(5) If you press the EDIT switch while the prompt "SURE?" is on the screen, the copying operation will be canceled and the initial editing screen will appear.

When you press the EDIT switch while pressing down the left CURSOR switch, the previous screen will appear.

◄ + EDIT

10. Saving the PROGRAM

After you complete the settings of all EFFECT SECTIONs, store the PROGRAM in the user area memory.

(1) Press the WRITE/SYSTEM switch.

WRITE / SYSTEM

```
** SYSTEM **
WRITE SYS MIDI
```

[1] [2] [3]

[1] Starts the WRITE operation.

[2] Starts the SYSTEM setting operation.

[3] Starts the MIDI setting operation.

(2) Move the cursor to the "WRITE" indication.

(3) Press the WRITE switch.

[1] [2]

```
WRITE P00 To P50
NAME =BigRoomEff
```

[3]

[1] PROGRAM number of the PROGRAM under editing operation

[2] PROGRAM number of the PROGRAM which has been written

[3] PROGRAM name of the PROGRAM which has been written

You can move the cursor between [2] and [3].

(4) Enter the PROGRAM number and name of the PROGRAM which has been written.

```
WRITE P00 To P50
     SURE? (Y/N)
```

(5) Press the WRITE switch. The prompt "SURE?" will appear.

Yes

```
COMPLETED!
```

No

```
CANCELED!
```

(6) Press the Yes switch to execute the storing operation. Or, press NO to cancel the operation.

Note: Editing of a PROGRAM is performed using the temporary memory space. If you change the PROGRAM number before writing (saving) a PROGRAM, all the data you have created so far will be lost.

(7) When the memory protect is ON, you cannot write (save) a PROGRAM even if you press the Yes switch.

Yes

```
WRITE PROTECTED!
```

When you press the EDIT switch while pressing down the left CURSOR switch, the previous screen appears.

◄ + EDIT

Section IV. RV-4 Operations Using MIDI

1. MIDI

1) What is MIDI?

MIDI is an abbreviation of Musical Instrument Digital Interface. In other words, it is a device that provides digital information transmission compatibility between musical instruments. MIDI conforms mainly to world standards for data communications between digital musical instruments. As long as a SYSTEM complies with the MIDI standards, it can transmit information accordingly regardless of manufacturer and musical instrument types. Since MIDI data can cover a wide range of activities such as musical performance and operations, the application methods have unlimited possibilities.

2) MIDI Information Used with the RV-4

- **Program change data**
  Generally used for selecting tone. The RV-4, however, uses this information for selecting 100 PROGRAMs and effect settings.
- **Bender data**
  Generally expresses up/down of music intervals by pitch bending. The RV-4, however, uses this information for controlling parameter values.
- **Pressure ('Aftertouch') data**
- **Modulation data**
- **SYSTEM exclusive data**

2. Settings for MIDI

1) Selecting the PROGRAM Number Using MIDI

Receives the program change data and switches the 100 PROGRAMs stored in the RV-4.

① Setting the MIDI channel

Unless the MIDI channel transmitting signals and the reception channel of the RV-4 are same, the RV-4 cannot receive data.

Use the procedure give below to set the sending and receiving channels of the RV-4.

1) Press the SYSTEM switch.
2) Use the CURSOR switches and move the cursor to the "MIDI" indication.
3) Press the SYSTEM switch.
4) Set the data using the CURSOR and VALUE switches.

```
*SYSTEM*
WRITE SYS MIDI
```



[1] SYSTEM transmission channel




```
*MIDI MENU*
CH PRG CTRL DUMP
```

[2] SYSTEM receive channel
[3] EFFECT SECTION 1 receive channel
[4] EFFECT SECTION 2 receive channel
[5] EFFECT SECTION 3 receive channel
[6] EFFECT SECTION 4 receive channel
You can move the cursor between data input fields [1] and [6].

```
   [1]       [2]
CH TRS=16 RCV=16
SC.RCV=(1 2 3 4)
       [3][4][5][6]
```

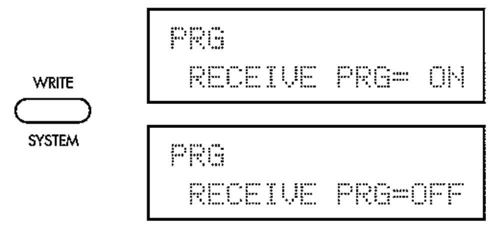
② PROGRAM mapping

You can preset the PROGRAM number to which the PROGRAM is to be switched in accordance with the program change data received (when the 100 PROGRAMs stored in the RV-4 are switched by program change data). (Program change data numbers 0 to 99 have been preprogrammed to PROGRAM numbers 00 to 99 stored in the RV-4, respectively, at the factory before shipment.)

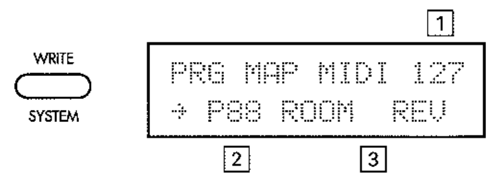
1) Press the SYSTEM switch.
2) Use the CURSOR switches and move the cursor to the "PRG" indication.



3) Press the SYSTEM switch.
4) Set the program change data receiving function to ON or OFF using the VALUE switches.



5) Press the SYSTEM switch.
6) Set the program change data number of the MIDI and its corresponding PROGRAM number of the RV-4 using the CURSOR and VALUE switches.

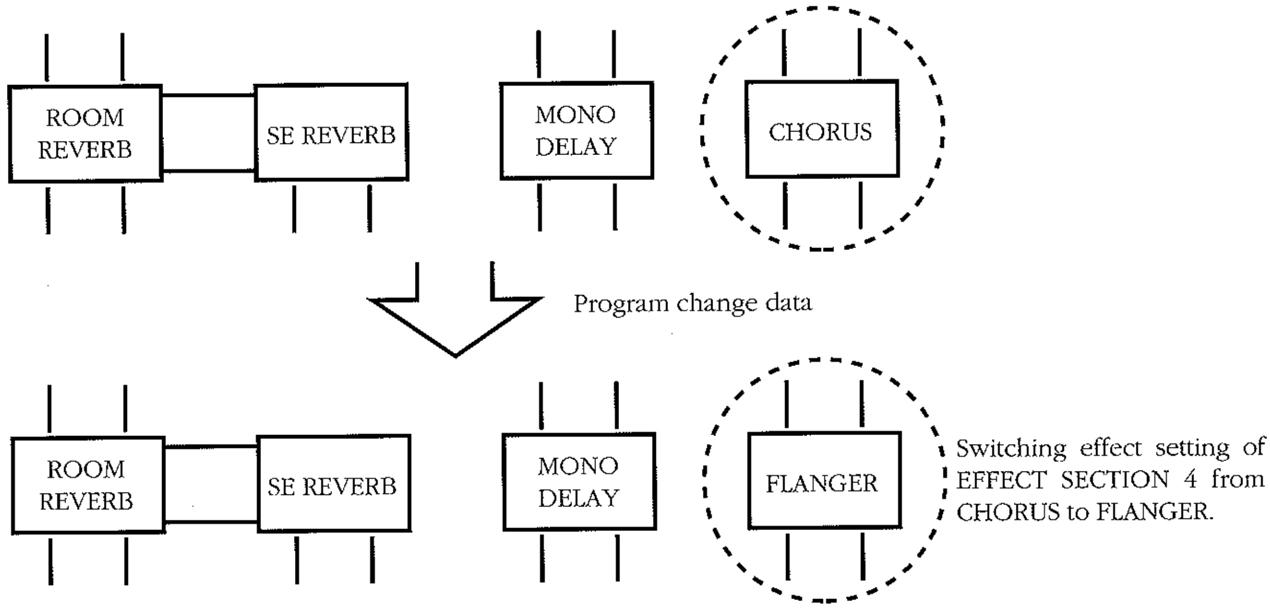


[1] Program change data number of MIDI
[2] PROGRAM number of corresponding PROGRAM stored in the RV-4
[3] PROGRAM name of corresponding PROGRAM stored in the RV-4

2) Selecting the Effect Setting Using MIDI

The RV-4 allows you to switch a PROGRAM using the MIDI. It can also switch the effect setting independently without having to change the connections of the 4 EFFECT SECTIONs in a PROGRAM.

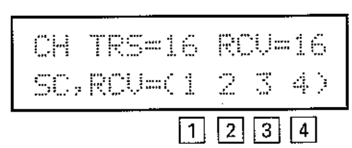
Example: PROGRAM 00



As shown in the above example, you can change the contents of the desired EFFECT SECTION only. Due to this reason, each of the 4 EFFECT SECTIONs must have its exclusive MIDI receive channel.

① Setting the receive channel of EFFECT SECTIONs

The procedure for setting the MIDI transmission and receive channels were explained earlier (pg 4-1). The second line displayed on that same screen is used for setting the receive channel of each EFFECT SECTION.



[1] EFFECT SECTION 1 receive channel
[2] EFFECT SECTION 2 receive channel
[3] EFFECT SECTION 3 receive channel
[4] EFFECT SECTION 4 receive channel

Notes:
- The receive channels you set here will be used for all PROGRAMs.
- When the receive channel of an EFFECT SECTION and the receive channel of the SYSTEM are same and if the program change data is received through this channel, the SYSTEM receive will have priority over EFFECT SECTION receive and the PROGRAM switching operation (instead of effect setting switching operation) will be performed.

② PROGRAM mapping

The RV-4 provides 400 effect settings as explained earlier (pg 1-4). You can specify one among 400 settings to which the effect setting will be switched in accordance with the program change data received by the SYSTEM.

(1) Press the SYSTEM switch when the PROGRAM mapping screen is displayed.




```
PGM MAP MIDI   64
   P63 HALL   REV
```

```
               [1]
SEC MAP MIDI 127
→ P64 E2  REVSET
   [2]  [3]    [4]
```

[1] Program change data number of MIDI
[2] Number of the PROGRAM, which contains the corresponding EFFECT SECTION, stored in the RV-4
[3] EFFECT SECTION number in the corresponding PROGRAM
[4] Effect setting name of EFFECT SECTION

If program change data number 127 is sent through MIDI, the effect setting of the EFFECT SECTION with the matching receive channel will be switched to the effect settings of EFFECT SECTION 2 of PROGRAM number 64 in this example. The name of the EFFECT SECTION's effect setting will be also switched.

3) MIDI Control

① Controlling the parameters using MIDI

You can control the parameters of each effect using MIDI information.

The RV-4 associates the parameters of each effect with the MIDI information listed below so that you can control the parameters using external MIDI equipment.

1. Bender
2. Aftertouch
3. Modulation
4. Volume

Set the MIDI reception channel of the EFFECT SECTION you want to control and the MIDI channel of the control information to be sent to the same channel.

(1) Move the cursor to the "CTRL" indication while the MIDI MENU screen is displayed.

```
  *MIDI MENU*
CH PRG CTRL DUMP
```

(2) Press the SYSTEM switch.
(3) Set the MIDI control receive function to ON or OFF.




```
CTRL RECEIVE
           = ON
```

```
CTRL RECEIVE
          = OFF
```

(4) Press the SYSTEM switch.



(5) Move the cursor to the upper line of the screen and use the VALUE switches to select the type of MIDI information.

```
CTRL BENDER   TO
 RV1 REV TIME
```

(6) Move the cursor to the second line of the screen and use the VALUE switches to select the parameter you want to control.

```
CTRL BENDER   TO
 RV1 REV TIME
```

The parameters you can control by MIDI:

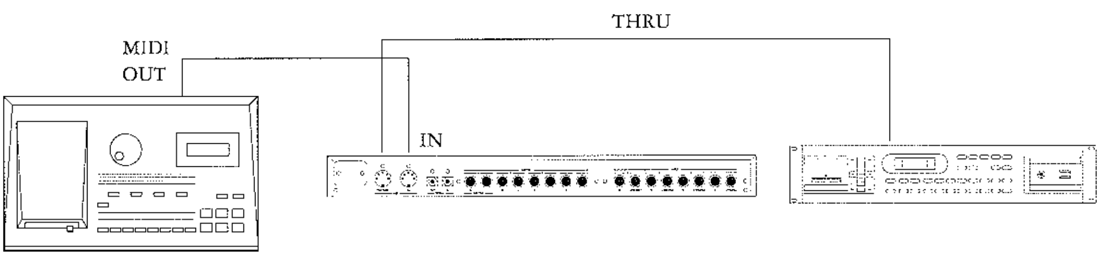
OUTPUT LEVEL			**DL4 DLb TIME**
BALANCE			**DL4 DLb FEED**
REV TIME (Common for all reverb modes)			**DL4 DLc TIME**
TWIN DLY	**DL1 DLa TIME**		**DL4 DLc FEED**
	DL1 DLa FEED	**ENSEMBLE**	**ENS RATE**
	DL1 DLb TIME		**ENS DEPTH**
	DL1 DLb FEED	**CHORUS**	**CHO RATE**
MONO DLY	**DL2 TIME**		**CHO DEPTH**
	DL2 FEED	**FLANGER**	**FLN RATE**
TRI PAR DLY	**DL3 DLa TIME**		**FLN DEPTH**
	DL3 DLa FEED		**FLN RESO**
	DL3 DLb TIME	**TREMOLO**	**TRM RATE**
	DL3 DLb FEED		**TRM DEPTH**
	DL3 DLc TIME	**EQ**	**EQ LOW LEVL**
	DL3 DLc FEED		**EQ MID POINT**
TRI SER DLY	**DL4 DLa TIME**		**EQ MID LEVL**
	DL4 DLa FEED		**EQ Hi LEVL**

Note: The changing of a parameter by MIDI is performed using a temporary memory area. If you change the PROGRAM number before writing (saving) a PROGRAM, all the data you have created so far will be lost.

② Setting the delay time automatically using the MIDI clock

When the MIDI sequencer or other similar device is connected to the RV-4, you can automatically set the delay using the clock (tempo signal) of the sequencer.

You can select the delay time period from the quarter (♩), eighth (♪), or sixteenth (♬) notes. When the length of these notes exceeds the maximum value of the delay time, when no equipment is connected to the MIDI jack, or when the MIDI clock is not included in the musical data, the delay time is set to the maximum value.



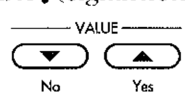
<Setting procedure>

The RV-4 provides 4 delay effect modes. The tempo for the parameters of these 4 delay effect modes can be automatically set using the MIDI clock.

(Example: Setting the delay time of the MONO DLY effect mode to eighth note)

```
E1   MONO DLY
DLY TIME =    0ms
```

Use the VALUE switch to decrease the parameter value displayed on the "DLY TIME = 0msec." screen. The message "EXT ♪(eighth note)" will appear.



In the above example, the delay time is set to the eighth note length of a musical tempo of the sequencer connected to the RV-4. For example, the delay time will be automatically set to the following values for a quarter note tempo equal to 120: EXT quarter note → 500msec., EXT eighth note → 250msec.

```
E1   MONO DLY
DLY TIME =EXT ♪
```

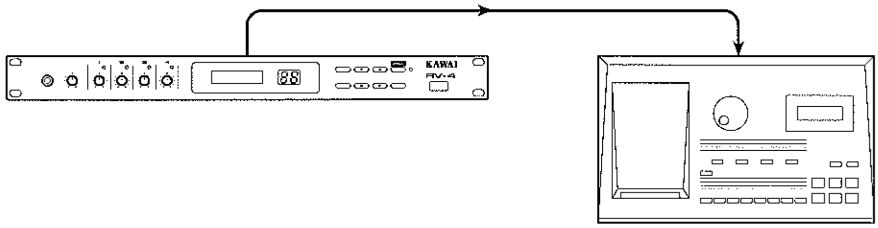
This modification data will be lost if you change the PROGRAM number before writing (saving) the PROGRAM.

4) Sending/Receiving Data Using MIDI

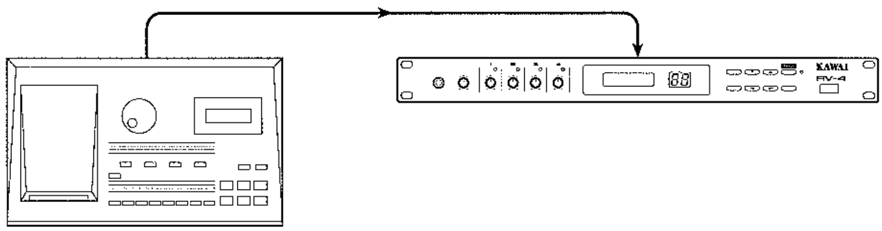
The exclusive information of MIDI allows you to store the PROGRAM setting and PROGRAM mapping data in the sequencer. It will also enable you to rewrite the PROGRAM mapping data and PROGRAM of the PROGRAM number specified from the external MIDI equipment.

① Connections

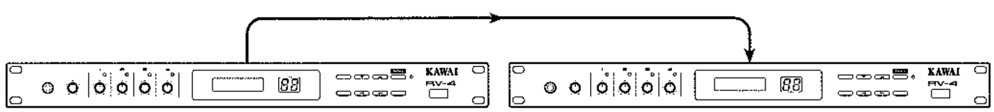
To save (send) data stored in the RV-4 in the sequencer



To send data stored in the sequencer to the RV-4



To copy (send) data stored in the RV-4 to another RV-4



② Sending data (Bulk dump)

The three data types you can send at once are given below:

- ALL
  All user PROGRAMs (50) and all PROGRAM mapping data (100 PROGRAMs and 127 EFFECT SECTION map data)
- MAP
  PROGRAM mapping data (100 PROGRAMs and 127 EFFECT SECTION map data)
- PRG
  All 50 user PROGRAMs or any desired PROGRAM

(1) Press the SYSTEM switch.

(2) Use the CURSOR switches and move the cursor to the "MIDI" indication.

WRITE / SYSTEM

```
*SYSTEM*
WRITE SYS MIDI
```

(3) Press the SYSTEM switch.

(4) Use the CURSOR switches and move the cursor to the "DUMP" indication.

WRITE / SYSTEM

```
*MIDI MENU*
CH PRG CTRL DUMP
```

(5) Press the SYSTEM switch.

(6) Specify the data type you want to dump using the VALUE switches.

WRITE / SYSTEM

```
DUMP          ALL
```

Each time you press the VALUE switches, the setting data displayed on the screen will change in the following order: ALL → MAP → PGM P50 → PGM P51, ... → PGM P99 → ALL

```
DUMP      PGM ALL
```

(7) Press the SYSTEM switch.

WRITE / SYSTEM

Example: When you specify "ALL"

```
DUMP          ALL
      SURE? (Y/N)
```

```
DUMP          ALL
    TRANSMITTING!
```

Press the Yes switch to execute the data transmission. Or, press NO to cancel the transmission.

Yes

```
DUMP          ALL
    COMPLETED!
```

No

```
DUMP          ALL
    CANCELED!
```

After the above screen is displayed, the MIDI MENU screen appears. (The cursor is displayed at the "DUMP" indication.)

③ Receiving data (Bulk load)

The RV-4 can receive data without any special setting as long as the memory protect function is set to OFF.

However, the SYSTEM transmission channel of the RV-4 which sends data and the SYSTEM reception channel of the RV-4 which receives data must be same.

Section V. Technical Data

1. Default Settings at the Factory Before Shipment

1) Setting conditions

MIDI transmission and reception channel 1 (system)
Program change map: Set to same number.

MIDI reception channels of EFFECT SECTIONs 1 to 4
EFFECT SECTION 1: ....2 ch
EFFECT SECTION 2: ....3 ch
EFFECT SECTION 3: ....4 ch
EFFECT SECTION 4: ....5 ch
Gain input: -20dBm, output: -20dBm

2) Recovering the default settings

Turn OFF the power.
Turn ON the power while pressing down the WRITE/SYSTEM switch to reset the settings to the default values set at the factory.
Data which is same as programs 00 to 49 will be stored in the user area memory.

2. Troubleshooting

When there is no sound reproduction or if the unit does not operate as it should, check the following items first. If after checking the following items you cannot recover the trouble, contact your place of purchase or Kawai dealers.

No sound is reproduced or sound is of low volume.

- Is the connection cable broken?
  Replace the connection cable.
- Is the unit properly connected to the external equipment?
  Check connections between the unit and external equipment.
- Is the volume set too low?
  Check the volumes of connected amplifiers and mixers.
- Are the RV-4 INPUT GAIN controls set too low?
  Set the INPUT GAIN controls to appropriate levels.
  See "5. Adjusting the Input Level" in Section II (pg 2-5).
- Set the input level of EFFECT SECTION in the SYSTEM mode to -20dBm.
- Set the output level of EFFECT SECTION in the SYSTEM mode to +4dBm.
- Is the program number data set correctly?
  Check whether parameter setting values such as "OUTPUT LEVEL" of EFFECT SECTION are set too low. (pg 3-2)

When the input signal is received, the CLIP indicator lights frequently.

- Did you adjust the INPUT GAIN controls?
  Set the INPUT GAIN controls to appropriate levels.
  See "5. Adjusting the Input Level" in Section II (pg 2-5).
- Set the input level of EFFECT SECTION in the SYSTEM mode to +4dBm.
- Is the output level of the external device connected to the unit too high?
  Set the output level of the external connected device to appropriate level.

The program number does not change when you press the VALUE switches.

- Is the parameter value setting mode screen displayed?
  Press the PRG. switch.
- Is the SYSTEM mode screen displayed?
  Press the PRG. switch.

The sound does not change even when setting values are changed using the VALUE switches.

- Is the BYPASS indicator turned ON?
  See "3) MIDI Control" in Section IV (pg 4-4).

Failure to receive MIDI information.

- Is the MIDI cable broken?
  Replace the MIDI cable.
- Is the unit connected properly to the external MIDI equipment?
  Check the connections between the unit and external MIDI equipment.
- Does the MIDI channel correspond to the channel of the connected equipment?
  See "(1) Setting the MIDI channel" in Section IV (pg 4-1)
- Check whether the memory protect function is set to ON.

The program change data is not received.

- Is the parameter value setting mode screen displayed?
  Press the PRG. switch.
- Is the SYSTEM mode screen displayed?
  Press the PRG. switch.

Effect sound operation by MIDI control is disabled.

- Check whether the MIDI control receiving is set to OFF.
  See "3) MIDI Control" in Section IV (pg 4-5).
- Is the EFFECT SECTION to be operated by MIDI control specified for bypass?
  Make sure that the EFFECT SECTION to be operated by MIDI control is set to ON.
- Does the MIDI control data (aftertouch, pitch bender, modulation, and volume data) match with those of the connected equipment?
  Check the data transmitted and data to be received.
- Does the reception channel of the EFFECT SECTION you want to control match the MIDI channel of the control data?

3. Summary of 19 Kinds of Effects and Their Initial Settings Values

The list of values to be initially set when you change the effect type in the effect sections are provided below.

Effect type	Parameter	Initial setting value
No. 1 HALL REV (RV1)	REV TIME	2.0sec
	HI DAMP	0.5
	PRE DLY	100msec
	LPF	THRU
	HPF	THRU
No.2 ROOM REV (RV2)	REV TIME	1.0sec
	HI DAMP	1.0
	PRE DLY	0msec
	LPF	THRU
	HPF	THRU
No.3 VOCAL REV (RV3)	REV TIME	1.0sec
	HI DAMP	0.3
	PRE DLY	50msec
	LPF	THRU
	HPF	THRU
No.4 PLATE REV (RV4)	REV TIME	4.0sec
	HI DAMP	1.0
	PRE DLY	0msec
No.5 LIVE REV (RV5)	REV TIME	4.0sec
	HI DAMP	1.0
	PRE DLY	0msec
No.6 SE REV (RV6)	REV TIME	4.0sec
	HI DAMP	1.0
	PRE DLY	0msec
	LPF	THRU
	HPF	THRU
No.7 GATE REV (RV7)	GATE TIME	70msec
	PRE DLY	0msec
	LPF	THRU
	HPF	THRU

Effect type	Parameter	Initial setting value
No.8 TWIN DLY (DL1)	DLa TIME	500msec
	DLa FEED	32
	DLa FEED DLb	0
	DLa LPF	THRU
	DLa HPF	THRU
	DLa PAN	L10
	DLa LEVL	127
	DLb TIME	1000msec
	DLb FEED	32
	DLb FEED DLa	0
	DLb LPF	THRU
	DLb HPF	THRU
	DLb PAN	R10
	DLb LEVL	127
No.9 MONO DLY (DL2)	DLY TIME	2700msec
	FEEDBACK	80
	PAN	C
	HI DAMP	1.0
No.10 TRI PAR DLY (DL3)	DLa TIME	400msec
	DLa FEED	50
	DLa LEVEL	127
	DLa PAN	L10
	DLa DAMP	1.0
	DLb TIME	600msec
	DLb FEED	50
	DLb LEVEL	127
	DLb PAN	C
	DLb DAMP	1.0
	DLc TIME	500msec
	DLc FEED	50
	DLc LEVEL	127
	DLc PAN	R10
	DLc DAMP	1.0

Effect type	Parameter	Initial setting value
No.11 TRI SER DLY (DL4)	DLa TIME	400msec
	DLa FEED	50
	DLa LEVEL	127
	DLa PAN	C
	DLa DAMP	1.0
	DLb TIME	500msec
	DLb FEED	50
	DLb LEVEL	127
	DLb PAN	L10
	DLb DAMP	1.0
	DLc TIME	600msec
	DLc FEED	50
	DLc LEVEL	127
	DLc PAN	R10
	DLc DAMP	1.0
No.12 ENSEMBLE (ENS)	DEPTH	16
	RATE	32
No.13 CHORUS (CHO)	DEPTH	16
	RATE	32
No.14 VIBRATO (VIB)	DEPTH	4
	RATE	72
No.15 FLANGER (FLN)	DEPTH	16
	RATE	32
	RESONANCE	100
No.16 PHASER (PH1)	DEPTH	16
	RATE	32
	RESONANCE	100
No.17 BI PHASE (PH2)	DEPTH	16
	RATE	32
	RESONANCE	100
No.18 TREMOLO (TRM)	DEPTH	16
	RATE	32

Effect type	Parameter	Initial setting value
No.19 EQ (EQ)	L-LOW DEPTH	0dB
	L-MID POINT	1KHz
	L-MID DEPTH	0
	L-HIGH DEPTH	0dB
	R-LOW DEPTH	0dB
	R-MID POINT	1KHz
	R-MID DEPTH	0
	R-HIGH DEPTH	0dB

4. Blank Chart

USER PROGRAMS

NUMBER	NAME	ROUTING	NUMBER	NAME	ROUTING
No.50			No.75		
No.51			No.76		
No.52			No.77		
No.53			No.78		
No.54			No.79		
No.55			No.80		
No.56			No.81		
No.57			No.82		
No.58			No.83		
No.59			No.84		
No.60			No.85		
No.61			No.86		
No.62			No.87		
No.63			No.88		
No.64			No.89		
No.65			No.90		
No.66			No.91		
No.67			No.92		
No.68			No.93		
No.69			No.94		
No.70			No.95		
No.71			No.96		
No.72			No.97		
No.73			No.98		
No.74			No.99		

MIDI PROGRAM CHANGE MAP (PROGRAM/EFFECT SECTION)

Receive Number	NUMBER/NAME	Receive Number	NUMBER/NAME	Receive Number	NUMBER/NAME
Pro 1		Pro 44		Pro 87	
Pro 2		Pro 45		Pro 88	
Pro 3		Pro 46		Pro 89	
Pro 4		Pro 47		Pro 90	
Pro 5		Pro 48		Pro 91	
Pro 6		Pro 49		Pro 92	
Pro 7		Pro 50		Pro 93	
Pro 8		Pro 51		Pro 94	
Pro 9		Pro 52		Pro 95	
Pro 10		Pro 53		Pro 96	
Pro 11		Pro 54		Pro 97	
Pro 12		Pro 55		Pro 98	
Pro 13		Pro 56		Pro 99	
Pro 14		Pro 57		Pro 100	
Pro 15		Pro 58		Pro 101	
Pro 16		Pro 59		Pro 102	
Pro 17		Pro 60		Pro 103	
Pro 18		Pro 61		Pro 104	
Pro 19		Pro 62		Pro 105	
Pro 20		Pro 63		Pro 106	
Pro 21		Pro 64		Pro 107	
Pro 22		Pro 65		Pro 108	
Pro 23		Pro 66		Pro 109	
Pro 24		Pro 67		Pro 110	
Pro 25		Pro 68		Pro 111	
Pro 26		Pro 69		Pro 112	
Pro 27		Pro 70		Pro 113	
Pro 28		Pro 71		Pro 114	
Pro 29		Pro 72		Pro 115	
Pro 30		Pro 73		Pro 116	
Pro 31		Pro 74		Pro 117	
Pro 32		Pro 75		Pro 118	
Pro 33		Pro 76		Pro 119	
Pro 34		Pro 77		Pro 120	
Pro 35		Pro 78		Pro 121	
Pro 36		Pro 79		Pro 122	
Pro 37		Pro 80		Pro 123	
Pro 38		Pro 81		Pro 124	
Pro 39		Pro 82		Pro 125	
Pro 40		Pro 83		Pro 126	
Pro 41		Pro 84		Pro 127	
Pro 42		Pro 85		Pro 128	
Pro 43		Pro 86			

REVERB MODE EFFECT SETTINGS

Name:	
Reverb Time:	
High Damp:	
Pre Delay:	
Lo Pass Filter:	
Hi Pass Filter:	

Name:	
Reverb Time:	
High Damp:	
Pre Delay:	
Lo Pass Filter:	
Hi Pass Filter:	

DELAY MODE EFFECT SETTINGS

Name:	
DLa Time:	
DLa Feed:	
DLa Feed DL2:	
DLa LPF:	
DLa HPF:	
DLa Pan:	
DLa Level:	
DLb Time:	
DLb Feed:	
DLb Feed DL2:	
DLb LPF:	
DLb HPF:	
DLb Pan:	
DLb Level:	
DLc Time:	
DLc Feed:	
DLc Pan:	
DLc High Damp:	
DLc Level:	

Name:	
DLa Time:	
DLa Feed:	
DLa Feed DL2:	
DLa LPF:	
DLa HPF:	
DLa Pan:	
DLa Level:	
DLb Time:	
DLb Feed:	
DLb Feed DL2:	
DLb LPF:	
DLb HPF:	
DLb Pan:	
DLb Level:	
DLc Time:	
DLc Feed:	
DLc Pan:	
DLc High Damp:	
DLc Level:	

MODULATION MODE EFFECT SETTINGS

Name:	
Rate:	
Depth:	
Resonance:	

Name:	
Rate:	
Depth:	
Resonance:	

EQUALIZER SETTINGS

Name:	
Low Depth:	
Mid Point:	
Mid Depth:	
High Depth:	

Name:	
Low Depth:	
Mid Point:	
Mid Depth:	
High Depth:	

4-Stereo Effect Processor

Model : RV-4

Date : Jul. 18 1992
Version : 1.00

MIDI Implementation Chart

Function		Transmission	Reception	Remarks
Basic Channel	Default Changed	1–16 1–16	1–16 1–16	Data is stored even after power is turned OFF.
Mode	Default Messages Altered	X X *******	X X	
Note Number	 Sound range	X *******	X X	
Velocity	Note ON Note OFF	X X	X X	
After Touch	For key For channel	X X	X *2	 *3
Pitch bender		X	*2	*3
Control Changes	1 7	X X	*2 *2	*3 *3
Program Change		X *******	0–127 0–127	Program mapping enabled
System exclusive		○	○	Setting parameters
System Common	: Song position : Song Select : Tune	X X X	X X X	
System real time	: Clock : Commands	X X	○ X	
Others	: Local ON/OFF : All notes OFF : Active Sensing : Reset	X X X X	X X X X	
Notes		*1: The Basic channel is common for both transmission and reception and cannot be set independently. *2: You can select either ○ or X and store the settings in the memory. *3: Enables control by specification of only on parameter.		

Mode 1 : OMNI ON, POLY   Mode 2 : OMNI ON, MONO

Mode 3 : OMNI OFF, POLY   Mode 4 : OMNI OFF, MONO

○ : Yes
X : No

Main Specifications

4-Stereo Effect Processor RV-4

- Number of memory areas
  User memory: 50
  Preset memory: 50
- Signal processing
  A/D conversion: 16 bits, linear
  D/A conversion: 18 bits, linear
- Sampling frequency
  48KHz
- Rated input level
  -20/+4dBm
- Input impedance
  600K ohms
- Rated output level
  -20/+4dBm
- Output load impedance
  50K ohms or more
- Frequency characteristic
  20Hz to 20KHz ($^{+1}_{-3}$ dB)
- Residual noise
  -95dBm or less (IHF-A)
  (Level switch: -20dBm, during THRU)
- Number of input channels
  8
- Input gain
  -20dB to +12dB (0dBm=0.775Vrms)
- Number of output channels
  8
- Controls
  <Front panel>
  INPUT GAIN controls: 1 to 4
  VALUE switches (up/down arrow switches)
  CURSOR switches (left/right arrow switches)
  BYPASS switch
  WRITE/SYSTEM switch
  PRG. switch
  EDIT switch
  POWER switch
- Displays
  Liquid crystal display (16-digit x 2 lines, back lit)
  LED 2 digits
- Indicators
  CLIP L/R indicators
  BYPASS indicator
- Connection terminals
  INPUT jacks L (MONO)/R x 4
  OUTPUT jacks L (MONO)/R x 4
  MIDI connectors (MIDI IN, MIDI OUT/THRU)
  DIGITAL I/O jacks
- Power supply
  AC 100V
- Power consumption
  25W
- Dimensions
  483 (width) x 44 (height) x 346 (depth)mm
- Weight
  4.5kg
- Accessories
  User's Manual
  User's Card

Note: Appearance and specifications subject to change without prior notice.

KAWAI

OW814E-C